Commoning in the Anthropocene

Responding to large-scale mining through practices of collective care.

The case of Skouries, Halkidiki, Greece.

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Statement of Originality

The thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968.

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Abstract

Earth scientists believe we have entered a new geological epoch named the Anthropocene. Humanity's endless pursuit of economic growth is presented as responsible for the creation of cumulative and overlapping crises, such as climate change, biodiversity loss, soil erosion, deforestation, pandemics and water depletion. Simultaneously, responses to the Anthropocene threaten to affect our current institutions of democracy through the retraction and repression of civil and individual rights with new forms of restrictions both physical and psychological. Within this frame, commoning practices of collective care provide an alternative pathway for addressing Anthropocene related problems (Gibson-Graham et al., 2016) and can function as laboratories to enrich our democratic institutions (Ostrom, 2015; D. Wall, 2017). This thesis examines the politics of commoning that have emerged in response to large-scale mining in Skouries of Halkidiki, Greece. My goal is to understand how particular forms of commoning arise and how they are spatially and temporarily different from the politics and practices that prioritize economic growth. To study commoning around Skouries I have conducted 40 face-to-face interviews, 5 focus groups and 5 participant observations with people from the anti-mining community. I have also used secondary data from documents and electronic sources in order to better understand the history and the depiction of the anti-mining struggle as well as the technical aspects of the large-scale mining investment. I have three main findings. First, large-scale mining in Skouries and the practices that prioritize economic growth seek to smoothen and standardize existing socioecologies in order to minimize disruption and dissent. Second, particular practices of collective care can slow down and, in some cases, challenge the devastating effects of mining and associated Anthropocene problems. Third, state authorities and civil society institutions associated with commoning need to find new ways of engaging with each other in order to build political institutions that value mutual aid, solidarity, care and empathy. I conclude that we need to train ourselves to listen to, attend to, and engage wholeheartedly with already existing alternative value systems, such as those created through commoning practices of collective care. In doing so democratic processes can be improved rather than destroyed to face the challenges of this new epoch.

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Chapter 1:
What Is This Thesis About?

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1.1 Introducing Commoning to the Anthropocene

The Anthropocene epoch is a newly defined geological epoch suggested by Crutzen and Stoermer (2000), in which humans for the first time in history are recognized as a disruption to planetary systems (Carrington, 2016; Crutzen, 2006a; Hamilton, 2013; Zalasiewicz et al., 2011). Phenomena like climate change, biodiversity loss, water depletion, soil erosion, pandemics and deforestation have triggered debates about the origins of this new epoch and how to mitigate such problems. The new epoch also poses questions about the relationship between ecosystems collapse and the endless search for economic growth (D'Alisa et al., 2015; Görg et al., 2020; Lane, 2019). This thesis contributes to questions about how humans should respond to Anthropocene-related problems.

Anthropocene-inspired research has pointed out that Nature responds to anthropogenic activity in unexpected ways. This realization has encouraged the view that we should no longer perceive Nature as passive. Instead, as political theorist Jane Bennett (2010) has argued, matter, the substance of all Nature, is vibrant and responsive to the pressure imposed on it by humans. As such, the Anthropocene challenges the anthropocentrism of modernity, and encourages us to think differently about the intensity and scope of the entanglements between humans and the non-human (Latour, 2018). Specifically, the Anthropocene epoch challenges human mastery over Nature, human exceptionalism, and the limitless appropriation of our bountiful Earth (Eckersley, 2018; Puig de la Bellacasa, 2017). In other words, the new epoch encourages a qualitative shift in our understanding of the relationship between human and non-human, from one of domination and exploitation to a relational one in which humans and the non-human are inseparably tangled together.

The result of this understanding is that pressure is laid on the dominant perspectives and normative claims about the image of reality or, in other words, the ontologies that underpin the design of democratic institutions in our societies. As Bollier and Helfrich (2019) have noted, there is a direct relationship between ontology and the design of our democratic institutions, since the latter reflects the commitments that we create towards each other and to the non-human world. As

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Dryzek and Pickering (2019) have argued, our current democratic institutions have been designed within, and respond to, problems of the previous geological epoch, the Holocene (Mert, 2019b). As Hamilton and his colleagues have suggested, we need to build and adopt new ontologies and understandings in light of our more relational concepts of human and environment (Hamilton et al., 2015, p. 8), which will also help us to design new institutions that reflect the requirements of the Anthropocene.

The inability of current democratic institutions to efficiently respond to Anthropocene problems has led various people, from scholars to artists and activists, to suggest alternative responses that overcome the existing democratic deficit. Some pessimistically encourage us to passively accept our fate and learn to die in the Anthropocene (Scranton, 2015). Others advise abolishing the democratic rule of law to contend with the urgency of Anthropocene problems, in favour of technocratic elites who can lead us out of the problems while retaining the existing economic status quo (Asafu-Adjaye et al., 2015). Another group suggests that capitalism as a socio-economic system is the problem, and that to solve it we need to replace it (Dean, 2012; Malm & Hornborg, 2014; Moore, 2017). Yet, within many responses, there is little concern about civil liberties and individual rights, or about the different relationships that can develop between humanity and the non-human.

This thesis aims to contribute to these debates. My key question is: How can Anthropocene-related problems be approached and mitigated in ways that enrich democracy and that are informed by the shifting perceptions of the human place in the world? This is an urgent question that local, national, and global stakeholders, sooner or later, are going to face. It is an existential question that targets the core of democratic politics in the Anthropocene. The thesis has been designed to challenge the idea that authoritarian tactics and approaches are best suited to tackle Anthropocene-related problems.

To respond to my thesis question, I focus upon the commons. A commons is a particular kind of an assemblage that allows people to enjoy freedom without repressing others, to perform fairly without bureaucratic oppression, to cultivate a sense of togetherness without compulsion, and to assert sovereignty without nationalism (Bollier & Helfrich, 2019, p. 26; Gibson-Graham et al., 2016). Most importantly, what brings commons to life is the relational, performative, and collective practice of commoning. The reasons for turning to commons and commoning are twofold. First, scholars suggest that commoning provides a potential way of successfully challenging local manifestations of Anthropocene-related problems such as climate change, global warming, deforestation, water depletion, and biodiversity loss (Gibson-Graham et al., 2016).

Second, as the political economist Elinor Ostrom (2015) has observed, commons can function as laboratories that can help to maintain and enrich our democratic institutions.

I investigate commoning for its potential contribution to democracy in the context of the Anthropocene. To analyze commoning, I conducted a case-study analysis of an area affected by large-scale mining in Greece, Skouries on the Halkidiki Pensinsula. Through my case study, I show how different commoning assemblages related to the mine offer insights into how to respond to Anthropocene-related problems. Through the case study, I aim to show that there is a need for societies and democratic institutions to develop an attentive stance towards the plural forms of commoning in order to respond to Anthropocene-related problems, without losing civil and individual freedoms. My argument is that, to maintain democracy in the Anthropocene, new institutions are required. To find institutional inspiration, we need to look for solutions in local, cultural, and historical contexts, and allow a diversity of bottom-up responses to inform different scales of decision-making processes. To do that, there is a need to be attentive to state-commoning association, understanding the importance of economic growth in decision-making processes, and the different spatial and temporal needs of the commoning participants. Unraveling the complexity of such relations will help better understand how to be attentive to the particularities of the context and the specific commoning practices. In other words, we need to train ourselves to listen, attend, and to engage wholeheartedly, with difference.

The affirmative thinking of new materialism helps me perceive the world not as a gloomy place where history is predetermined; instead, I look for places and moments of hope in the Anthropocene (Head, 2016). In this endeavour, I examine the production of politics and knowledge that derive through practices of *caring with* that create new understandings and theorizing about the world (Gibson-Graham, 2006b; Latour, 2004; Power & Williams, 2020). Within this frame, I follow Gibson-Graham's (2006b) problem that posed the question:

> What if we believe, as Sedgwick suggests, that the goal of theory was not only to extend and deepen knowledge by confirming what we already know—that the world is full of cruelty, misery, and loss, a place of domination and systematic oppression? What if we asked theory to do something else—to help us see openings, to help us to find happiness, to provide a space of freedom and possibility? (p. 7)

By focusing on hope and the opening of new political possibilities through commoning, I perceive research to be a practice of world-producing, as a performative activity, and a mode of creating

new forms of knowledge of the world (Gibson-Graham, 2008; Law & Urry, 2004). I approach my case study by adopting the politics of democratic possibility (Gibson-Graham et al., 2016), and as a hopeful politics directed towards an effort to amplify the visibility and the importance of commoning for mitigating Anthropocene-related problems.

1.2 Research Objectives and Question

My research aims have been to contribute new knowledge to the question of how to respond to Anthropocene challenges in democratic ways. I have done this by conducting empirical research on a mining project in Greece and analyzing the diverse forms of commoning practiced in relation to the mine, adopting a more-than-human perspective throughout. The research objectives and question have drawn insights from a particular context and have aimed to infuse commoning theory with new information, which can enrich our understanding of the concept and improve its political applicability. From this perspective, I have developed three complimentary questions.

This research project seeks to understand:

- What forms of commoning exist in Skouries and what are the diverse ways the different forms of commoning relate to large-scale mining?
- What role does the State play in supporting forms of commoning that help to respond to the Anthropocene epoch? And,
- How might we amplify the positive effects of commoning to mitigate the negative impact of the Anthropocene epoch, while maintaining and enriching democracy?

1.3 Chapters and their Aims: An Overview

After this first introductory chapter, I explore, in Chapter 2, the political limitations and possibilities of popular Anthropocene debates about the origins of this new epoch and how to respond to challenges related to the Anthropocene. More specifically, in the first section of the chapter, I investigate where different scholars locate the birth of the Anthropocene and position myself within this plurality of perspectives. In the second section, I focus on four popular political responses to Anthropocene problems. I focus on 'if' and 'how' different narratives engage with non-human agency, and how different approaches affect democratic politics.

In Chapter 3, I turn to commoning. In the first section of this chapter, I provide an overview of literature on commons to show the possibilities and limitations of the different commons'

traditions. I then position my understanding and justify why I chose to work with the concept of commoning as practices of collective care (Bresnihan, 2016a; Gibson-Graham et al., 2016; Parris & Williams, 2019). After explaining my standpoint, I point out that not all forms of commoning contribute equally towards mitigating the negative effects of the Anthropocene epoch. In order to explain the difference between commoning assemblages and other commoning practices, I utilize an adjusted version of Power's (2019) model of caring capacity: the socio-material, the spatial, and the temporal dimensions of care. Combined, these three dimensions form the criteria for assessing how different forms of commoning contribute differently to Anthropocene-related problems. I conclude the chapter by setting the stage for the methodological approach upon which I will then analyze my four empirical chapters.

Chapter 4 explains the methodological stance of my paper, presenting the tools of analysis and my ethical commitments. This chapter also allows me to explain why I have chosen to examine Skouries in Halkidiki, Greece, as my case study. I explain how my case-study qualitative methodology is informed by recent work on new materialism and the affective politics of collective care (Papadopoulos, 2012; Puig de la Bellacasa, 2015, 2017), in terms of commoning (Gibson-Graham, 2008; Gibson-Graham et al., 2013, 2016; M. J. Williams, 2018). I describe the mixed methods used to collect and analyze my data concerning commoning practices. These methods include primary data collection such as semi-structured interviews, including field observations, focus groups, participant observations, and secondary data collected through document and media analysis.

Three out of the four empirical chapters utilize Power's (2019) three-dimensional frame to analyze the commoning examples that I present in each of the three chapters. Each of these three empirical chapters focuses on a different form of commoning. In Chapter 5, I concentrate on accumulative commoning; in Chapter 6, I focus on livelihood commoning, and in Chapter 7, I focus on political commoning. In each of the three chapters, I explain why I identify the commoning examples as such. However, each of the three empirical chapters has its unique characteristics.

In Chapter 5, I address the concept of accumulative commoning as a way to focus on commoning practices that support the maintenance and reproduction of the large-scale mining assemblage. I divide Chapter 5 into two sections. The first section focuses on the process of spatial and temporal smoothening of the socio-material relations that the large-scale mining assemblage is imposing in Skouries minefield. In the second section, my focus turns to accumulative commoning, meaning the practices that allow the large-scale mining assemblage to establish and

flourish in Skouries. In doing so, I show that some forms of commoning reinforce, rather than resolve, Anthropocene-related problems.

In Chapter 6, I examine how small-scale commoning assemblages that focus on livelihood activities are shaped by and respond to large-scale mining. The chapter focuses on exploring the livelihood commoning assemblages that carry the seeds of political change. In each assemblage, I explore the socio-material relations, the spatial and temporal effects of *caring with*, which entails a potentially transformative political force (Bollier & Helfrich, 2019; Gibson-Graham et al., 2016). In addition to that, I explore each assemblage's scale of influence and relationship to the mining assemblage. The purpose of this analysis is to help understand how assemblages-of-*caring-with* are politically different to commoning practices that are preoccupied with economic growth, as presented in Chapter 5. Assemblages-of-*caring-with* cultivate an ethos of solidarity and mutual benefit, rather than of economic growth through exploitation.

Chapter 7 attends to small-scale commoning assemblages that challenge modes of being that are derived from the accumulation of economic growth at all cost. The goal is to understand how assemblages that directly challenge a mode of being that is predominately based on accumulation of economic growth are affected by and challenge the large-scale mining assemblage. I categorize these assemblages as political ones. Similarly to Chapter 6, in each assemblage, I explore the socio-material relations, spatial, and temporal effects of caring, in my attempt to show how the relations of political commoning assemblages generate a potentially transformative political impact (Bollier & Helfrich, 2019; Gibson-Graham et al., 2016). Adding to that, I investigate the scale of influence of each commoning assemblage, as well as their relation to the mining assemblage. As in Chapter 6, the purpose of this analysis is to help understand how commoning-as-*caring-with* assemblages are politically different to the assemblage preoccupied with endless economic growth, as presented in Chapter 5.

Chapter 8 attends to the role of formal governance practices in reinforcing particular commoning assemblages. I chart the role of Greek governments and local (municipal) authorities between 2011 and 2019 in their relationship with the three different types of commoning around Skouries. I divide the chapter into two main sections, from 2011-2015 and 2015-2019. Each section signifies a shift in the relationships between different forms of commoning and these authorities. The starting point is 2011, because this is the year when Greek governments and the collaborating local authorities started promoting large-scale mining in Skouries. The first period ends in 2015 with the election of anti-mining local and national authorities, and the second ends in 2019 with the failure of these authorities to prevent the large-scale extractive investment. The

chapter aims to help me reflect upon the possibilities and limits of State relationships with different commoning formations. Providing strategies for overcoming current institutional limitations is a precondition for initiating opportunities that amplify the ability of commoning assemblages to mitigate Anthropocene-related problems, as well as for enriching democracy in this new geological epoch.

The thesis concludes by offering reflections upon the role of commoning assemblages in the Anthropocene. More specifically, in Chapter 9, I argue that the plurality of commoning assemblages and the different value systems they embody can play a fundamental role in responding to Anthropocene-related problems in a democratic fashion. After a brief review of my thesis' key findings, I turn to the major question of my PhD project. To respond to this question, I suggest that democratic institutions need to build a new capacity for being attentive, for listening to and engaging with commoning assemblages, differently to the past. This stance aims to encourage a political future that should make space for heterogenous responses and ontologies, rather than the homogenous responses that reproduce existing exclusions, and that increase pain and inequality in the Anthropocene.

Chapter 2:
Approaching the Anthropocene

The Anthropocene epoch poses unique challenges to the environmental sustainability of the planet, and provides possibilities and threats to democratic politics (Dryzek & Pickering, 2019; Mert, 2019b). In response to global environmental destabilization, scholars have developed multiple theories of how Anthropocene-related problems will be addressed. This chapter firstly offers a brief overview of where different scholars locate the origins of the Anthropocene. In the second section, I explore the relationship of four popular Anthropocene ontologies with non-human agency and democratic politics. To do this, I find inspiration from Lövbrand et al.'s (2015) frame of analysis. Each ontology envisions politics and non-human agency within the Anthropocene differently. In the third and final section of the chapter, I discuss why it is important to maintain and enrich democracy, and finally, the sorts of practice that align with the requirements of the Anthropocene. The discussion underscores the primary research question of the thesis and shows why it makes sense to approach the Anthropocene in terms of commoning. Foregrounding my research within this frame will help the reader understand how vibrant and urgent the discussion about the Anthropocene and democracy is.

2.1   The Anthropocene Discussion

The debate about where to place the origins of the Anthropocene epoch is vibrant and intrigues scholars from a variety of disciplines. Some think that the term 'Anthropocene' does not offer anything new to the discussion about anthropogenic destruction; others locate its origins in the advent of agriculture, or the Industrial Revolution, or more recently, since during the post-war Great Acceleration. Below, I give some specific examples of the different categories, while I also position myself within these debates.

2.1.1   Locating the Origins of the Anthropocene Epoch

There is a great diversity amongst pre-industrial positionings about the Anthropocene origins. Ruddiman (2003) argued that the shift from the Holocene epoch to the Anthropocene originated around 5,000 to 8,000 years ago with the development of agriculture and forest cleansing that enhanced carbon dioxide (CO_2) and methane (CH_4) emissions in the atmosphere.

Soil scientists entered this interdisciplinary debate, arguing that the Anthropocene should be positioned 2,000 years ago with the beginning of domestication, deforestation, extensive agriculture, mining, and urbanization processes (Certini & Scalenghe, 2011, 2015, 2021). Lewis & Maslin (2015) supported the idea that during 1610 there was a dip in carbon dioxide due to multiple social and natural factors, and this shift could be an indicator of the origins of the new epoch.

The pre-industrial Anthropocene narrative has some support amongst scholars in the humanities and social sciences. Specifically, Bonneuil & Fressoz (2016) argued that the Anthropocene is just another way to refer to "environmental disturbance" and thus it does not have anything new to offer as a concept (p. 198). Similarly, geographer Noel Castree (2019) suggested that the Anthropocene is just another buzzword for the same old problems. Another example is Erle Ellis, a landscape ecologist, who saw the Anthropocene as a continuum of human intervention on the planet's biosphere for about 11,000 years (Ellis, 2018; Ellis et al., 2013). Consequently, he suggested that the name 'Holocene' could be replaced by the term 'Anthropocene' as covering both epochs (Ellis et al., 2013, p. 7978).

However, according to a multidisciplinary group of Earth system scientists, there is neither sufficient nor convincing evidence to prove any of the pre-industrial Anthropocene hypotheses (Steffen et al., 2011, pp. 848–849). As Hamilton (2017) argued, when we refer to humans as a geological power, we should be aware that we are talking about our ability to change the conditions of life on Earth in its totality, and not just of a few ecosystems or only the surface of the planet (p. 16). Therefore, we are talking about a radical scaling up of humanity's influence on the Earth (Hamilton & Grinevald, 2015, p. 66). According to this view, the Anthropocene constitutes a radical break from the conditions that produced the Holocene epoch (Crutzen, 2006a; Hamilton, 2017; Zalasiewicz et al., 2011, 2017). This is a matter of ongoing debate informed by scientific data, charts, and graphs such as in Figure 2.1.

Figure 2.1
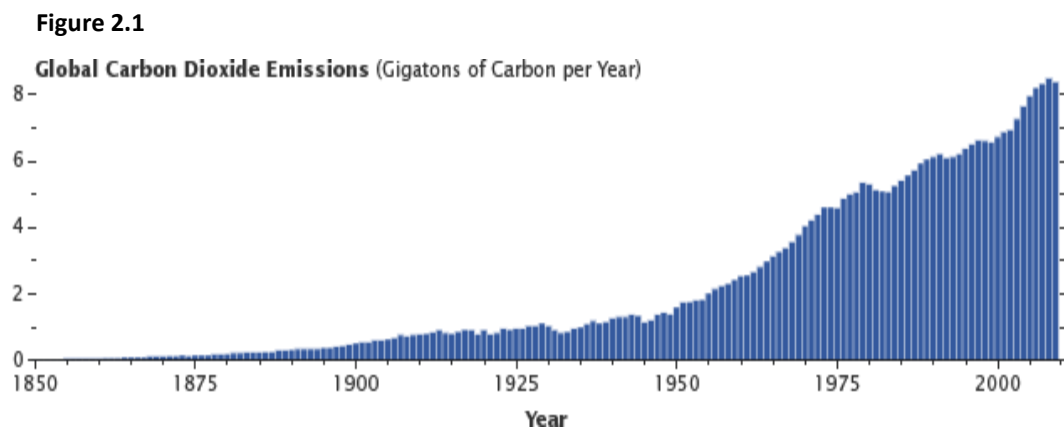
Source: NASA Earth Observatory: https://earthobservatory.nasa.gov/features/CarbonCycle/page4.php

Claims like that of Hamilton have pointed to the fact that some extraordinary things have happened since the Industrial Revolution (Haraway, 2016). Locating the commencement of the Anthropocene here rather than with the beginnings of human life, or with the birth of agriculture, helps to question the belief that human agency is inherently bad and unavoidably connected to global catastrophes (Swyngedouw & Ernstson, 2018). Instead, it projects that specific social, economic, and technological events and forces have enabled an extensive alteration of the Earth systems (Hamilton, 2013, 2017, p. 15). It also discards the logic that the Anthropocene is a gradual advancement of previous stages of human activities on the planet. For the first time, human development pathways are creating severe, long-lasting, and irreversible damage to the planet (Hamilton & Grinevald, 2015, pp. 66–67).

A more popular timeline positions the origins of the Anthropocene around the end of the Second World War, the so-called 'Great Acceleration' period. This period was when the levels of carbon dioxide spiked in the atmosphere due to the expansion, intensity, and acceleration of industrial production (Steffen et al., 2015). I consider the Great Acceleration period as a pivotal moment and a qualitative shift in the Anthropocene epoch, through the connection of industrialism; technoscientific advancements driven by the idea of endless accumulation of economic growth, decoupled from material scarcity (Lane, 2019, p. 19). The Great Acceleration is a product of the entanglement between technology, science, and the belief of endless economic growth. This entanglement has transformed an economy of growth that previously depended on biophysical constraints, to an economy that grows through immaterial and speculative economic products. Consequently, I observe the entanglement of technology, science, and the myth of endless economic growth as the fundamental problem, rather than as merely a specific time period. Alternatives must address this entanglement if they are to respond effectively to the challenges of the new epoch (Figueroa, 2017; Kallis, 2017; Lane, 2019).

How, then, do we respond to these drivers of Anthropocene change? In what follows, I provide a brief introduction to four types of responses to the Anthropocene. I cannot do justice to the complexities of these debates, but I find it useful to introduce them in order to position and legitimize my own approach, which aligns with the ontology last described.

2.1.2   Four Anthropocene Ontologies

Debates about the Anthropocene epoch are not only limited to the topic of its origins. A large community of commentators, scientists, novelists, and journalists have begun to engage around the politics of the Anthropocene and how to mitigate Anthropocene-related problems. As Bollier (2020) observed, political debates are not just about legal issues, political technicalities, or

economic interests; they reflect fundamentally opposing worldviews. They are debates about how human beings should or could relate to each other, to the non-human, and about the types of institutions and technologies that can support these relations. Through this lens, debates about how to respond to Anthropocene problems are also debates about competing ontologies. I have chosen to review the four most prominent Anthropocene ontologies to position myself within this debate. The two factors to which I apply most focus in my analysis are: (a) agency, and (b) the relation between ontology and democracy.

The debate about how to respond to the Anthropocene comes in a period where we are experiencing the political ramifications of a global pandemic. A recent report from the Bennett Institute for Public Policy, in collaboration with Cambridge University, showed that satisfaction with democracy amongst people is drastically declining (Foa et al., 2020). This research was conducted across two continents, in the US and Western Europe. Such dissatisfaction is likely to be connected to current forms of democracy that have failed to address problems related to the Anthropocene epoch, such as climate change, Covid-19, and refugee movements, alongside ongoing economic inequality and public unaccountability (Mert, 2019b, p. 10). As many scholars working with democratic politics have noticed, this phenomenon is related to the entanglement of democratic-political institutions with market-based ones, which are preoccupied with the endless accumulation of economic growth (Bitros & Karayiannis, 2013; Dean, 2009; Harvey, 2014; Polanyi, 2001; Powell, 2000). In other words, the problem with current democratic regimes and institutions is not inherent to democracy, but relative to a particular economic developmental logic. Different ontologies approach this relationship in different ways.

2.1.2.1 The Dystopian Ontology. In her book, *The Sixth Extinction* (2014), Elizabeth Kolbert, a science journalist for *The New Yorker*, described a gloomy future of continuously collapsing ecosystems. Kolbert interviewed a fictional 'madness gene' that accounts for humanity's destructive ecological purpose. A geneticist then said, "To think that it [the madness gene] … changed the whole ecosystem of the planet and made us dominate everything" (Kolbert, 2014, p. 252). Kolbert appeared to entertain the idea that, since Homo sapiens emerged as a distinct hominid species, there has always been a tendency for destruction (Kunkel, 2017).

Another dystopian example was proposed by American philosopher, Timothy Morton (2013). The scholar associated the Anthropocene with hard-to-grasp concepts like climate change, which he called *hyperobjects*. It is difficult to see hyperobjects or make sense of them. Climate change, for example, is impossible to perceive directly, yet it affects all of us when we experience heavy droughts in summer seasons or the rapid melting of ice glaciers in Antarctica. Morton

presented the climate as an active agent that takes revenge for all damage humans do to the planet and its collapsing ecosystems. Hyperobjects then appear as world-destroying entities. The philosopher argued that humanity is unaware of the planetary damage that it causes until it is too late to do anything to reverse it. Former American military veteran, Roy Scranton (2015), went a step further. He pointed out that humanity has to accept Nature's punishments, such as a devastating drought, as a form of catharsis, and as the only way for our species to rediscover its lost humility (p. 23).

Dystopian Anthropocene projections, as presented above, express a pessimistic view of humanity. They envision humanity as a species of destructive agency (Hickman, 2010; Swyngedouw, 2010; Swyngedouw & Ernstson, 2018; Tønder, 2019). This destructive agency unavoidably leads to hubris and punishment from Nature. Presented as a biblical response, humans must pay for their sin and need to be replenished and reborn from the ashes of destruction (Scranton, 2015). This idea, however, has two flaws. First, it essentializes humanity by presupposing that the human, as such, is born destructive by nature. This understanding does not explain how a species' destructive nature would suddenly defy its very own defining characteristic. The second flaw is the affiliation between dystopian ontologies and political mobilization. As shown above, many dystopian projections encourage the depoliticization of politics by aiming to hide the genuine political space of democratic disagreement about how the present could affect the future (Swyngedouw, 2010, p. 228). By describing the future so that we already know the outcome provides no space for political negotiation and contestation of decision-making processes. By erasing political disagreement, this ontological reality raises questions about the political feasibility of complex democratic decision-making that considers concerns about equality, ecological sustainability, and justice. Dystopian readings encourage a post-political condition that ignores the existence and importance of political antagonisms and conflict. In that sense, this ontology disables fundamental elements of democratic politics.

In addition to how human agency is presented, non-human agency is also projected as destructive. Dystopian Anthropocene ontologies and their responses seem to entangle human and non-human agency into a destructive loop with no way out. This approach disables hopeful projections and obscures examples that may show that there is hope in the Anthropocene (Gibson-Graham et al., 2016; Head, 2016).

2.1.2.2　The Post-Marxist Ontology.

Scholars who support the post-Marxist ontology argue that the Anthropocene epoch is a product of capitalism. Jason Moore (2016) approached capitalism as a social system that appropriates Nature for its own use (as cited in Armiero & De Angelis, 2017, p. 346). By appropriating Nature, capitalism destabilizes ecosystems (Crutzen & Stoermer, 2000; F.A. Jørgensen & D. Jørgensen, 2016). These scholars argue that the expansion of the capitalist economy allowed for the extensive and unsustainable use of cheap energy, especially from fossil fuels and their sub-products, which led to the production of this new epoch (Malm, 2016; Moore, 2014b, 2016b; Patel & Moore, 2017; Rockström et al., 2016). For that reason, they suggest replacing the name *Anthropocene* with *Capitalocene* (Moore, 2016a, 2017, 2018).

The interpretation for the problems generated by the Capitalocene from scholars who have advanced this view, is the development of anti-capitalist solutions. By positioning capitalism at the centre of all Anthropocene-related problems, they argue that any kind of effective solutions to these problems can only occur outside the capitalist mode of production (Malm, 2018a, 2018d). An abstract humanity is no longer the centre of attention; rather it is a mode of production and a capitalist social class that reproduces the adverse effects of the new epoch. By replacing the capitalist mode of production and the capitalist elite with the working class and a socialist mode of production, this response aims to solve the problems related to the new epoch (Dean, 2019; Malm, 2018b, 2018c). In other words, the ideal resolution of the political struggle would be the replacement of capitalism with another social, political, and economic system. Post-Marxists argue that the Anthropocene is a depoliticizing term (Houston, 2013; Moore, 2015; Swyngedouw, 2011, 2013b; R. L. Williams, 1977/2009), as it erases social hierarchies, political power relations, and historical inequalities (Armiero & De Angelis, 2017; Byanyima, 2015; Malm & Hornborg, 2014; Merrick, 2014; Moore, 2014a, 2016a) by claiming that an undifferentiated humanity is equally to blame, as opposed to wealthy capitalists specifically.

A weakness of the post-Marxist approaches is the relatively sparse analysis of non-human agency in a future non-capitalist society (Breen, 2014; Drake, 2015; Painter, 2016). While post-Marxists, and especially radical-democracy scholars, recognize the value of political antagonisms, contestation, and conflict in the democratic process (Kioupkiolis, 2019; Laclau & Mouffe, 2001; Mouffe, 2005; Unger, 2009; Wolin & Xenos, 2018), they still have little to say about how the non-human can participate in the democratic politics of the new epoch. In other words, post-Marxism remains a very anthropocentric ontology. In fact, in post-Marxist responses, Nature is presented as enclosed, domesticated, technologically modified, and economically monetized, to the extent that it is difficult to consider it natural anymore (Harvey, 2011a, 2011b;

Lövbrand et al., 2015, p. 213). As political scientist Jodi Dean (2016) indicated, class struggle without ecology can support extractivism, just as capitalism does. Dean argued that post-Marxist responses must overcome human exceptionalism, if overthrowing a system that generates the problems of our epoch is not to be replaced by another system that perpetuates the modes of exploitation that brought this new epoch into being.

2.1.2.3 The Promethean Ontology.

In the Promethean ontology, large-scale geoengineering experiments, such as space reflectors, stratospheric aerosols, enhanced weathering, and ocean fertilization (Oxford University, 2018) are presented as a way for authorities to manipulate and fix the environmental instabilities of this new epoch (Corry, 2017). Many proponents of the technoscientific Anthropocene responses purport to be ecomodernists. They have produced a manifesto for approaching the Anthropocene problems through technology and science (Asafu-Adjaye et al., 2015). Geoengineering projects a future where machines and other human-made innovations will be utilized to control the climate and to better absorb the pollution associated with increasing human production and consumption (Corry, 2017; Kintisch, 2011; Tønder, 2019).

Promethean approaches promise scientific solutions to Anthropocene problems that do not entail political or social change. Geoengineering provides a relatively quick and easy solution (Gardiner & McKinnon, 2020) without affecting the social, political, and economic order (Anshelm & Hansson, 2014; Baskin, 2019). Geoengineering is comforting to many and precludes more radical forms of action.

However, geoengineering requires an enormous allocation of social, economic, and political resources for speculative and unproven outcomes (Schneider, 2019). Proponents of geoengineering are focusing on ways to finance a variety of different technoscientific projects. In two articles that focused on the use of stratospheric sulfate aerosols, prominent scholars, such as Crutzen (2006b) and Rasch et al. (2008), argued that geoengineering could solve policy dilemmas in climate governance. Based on these influential arguments, many institutions, such as universities and local authorities, turn to geoengineering projects to attract public funding (Anshelm & Hansson, 2014, p. 135). In many cases, heavy investment in geoengineering places it in a favourable position when competing with other risk-adaptation and -mitigation strategies (Mert, 2019a, p. 131).

Prometheans have strong faith in human agency and technology. This ontology celebrates how human agency, enhanced with technoscientific tools, can affect the conditions of living on

the planet. Anthropocentrism is also celebrated. Similar to the post-Marxist ontology, non-human agency is perceived as passive, enclosed, technologically altered, and economically monetized to the extent that it is difficult for someone to distinguish the natural from the artificial processes (Harvey, 2011a, 2011b; Lövbrand et al., 2015, p. 213).

Concerning democracy, the Promethean ontology poses a direct threat to it. As Swyngedouw (2013a) has argued, democratic politics are replaced by technoscientific managerial solutions in the Promethean ontology. Proponents of this ontology have argued that the urgency of problems like climate change require putting democracy on hold in favour of technoscientific solutions stripped from political debates (Mert, 2019a, p. 138). The logic is that democratic institutions cannot respond to global challenges fast enough (Ball, 2006, p. 133). Yet, technoscientific responses seem to fail to provide viable and secure solutions to the problems they aim to tackle (Baskin, 2016; Ferraro et al., 2011; Hamilton, 2013; McGregor & Houston, 2018, p. 3). As Aysem Mert (2019a) has noted, depoliticizing the current ecological crisis and the ways we aim to address it could become a significant threat to democracy, while also further threatening the ecological balance (p. 136). For example, as political scientist Olaf Corry (2017) has noticed, for geoengineering to operate on a global scale, the suspension of political debates and judicial processes are required (p. 309). That leads scholars from different disciplines to question the political legitimacy and democratic accountability of Promethean responses (Skelton, 2011; Stiglitz, 2003).

2.1.2.4   Weak Ontology and New Materialism. Against the ontologies that either pose a threat to democracy or fail to include non-human agency in political decision-making processes, a wave of scholars have started shifting the discussion. The wave takes its point of departure from Stephen K. White's suggestion that a radically different way of reading ontologies is needed – what he calls "weak ontology" (as cited in Schoolman, 2002, p. 818; White, 2000, 2005), which is not unlike Gibson-Graham's (2006b) idea of "weak theory". The essence of weak ontology and weak theorizing is that this kind of theoretical intervention makes space for a plurality of ways of thinking. Rather than trying to fit the world to pre-existing ideas, weakness indicates flexibility and openness. Another term that describes this theoretical approach is "ontological pluralism" (Simmons, 2020).

The ontological turn is based on the observation that traditional ontologies, including the dystopian, the post-Marxist, and the Promethean, are closed systems with a predetermined telos. To distinguish them from weak theory and ontology, White characterizes these as examples of strong ontology and theory (White, 2000b, 2005). Strong ontologies and their responses explain

the world in a causal way that leads to a particular known end. For post-Marxists, the communist horizon is the undisputable ideal political telos to achieve (Dean, 2012). For dystopian advocates, ecosystem collapse works as the catharsis that leads to a purified new humanity (Morton, 2013; Scranton, 2015). Promethean supporters consider that humans can manipulate non-human phenomena and continue their productive activities without any further consequence, by utilizing technology (Anshelm & Hansson, 2014). These closed ontological systems prevent any discussion about contingency and the prospect of the unpredictable occurring. In this light, they express a linear logic towards their end goals.

To respond to the challenges posed by strong ontologies, White (2000b) proposed an ontology with no predetermined end. This kind of theorization poses an alternative to ontologies that make solid and unquestionable claims about the image of reality. White, amongst other scholars, proposed that an ontology should be understood partially, be open to unpredictable change (contingency), and that its normative claims are always contestable (Fox & Alldred, 2015, p. 6; Gibson-Graham, 2006a; Rosenthal, 2018, p. 22; Sedgwick, 2003). Presenting an ontology as partial, contingent, and contestable, allows for a plurality of possibilities, forms of being, thinking, and doing to emerge and co-exist. This approach invites us to welcome contingency and the unpredictable as part of the process of shaping a future full of opportunities.

Within this frame, political theorist William Connolly (1995) suggested that weak theorizing both relies on and encourages an ethos of pluralization. By not claiming what the outcome of a particular approach will look like, this mode of theorizing provides space for a political struggle between different responses. It then becomes acceptable to try to change the world by responding differently to problems. There are no predetermined telos but always open political struggles (Connolly, 2013; Rosenthal, 2016). These struggles are based on the recognition of the existence of power conflicts embodied in the political, which then allows for constant opportunity for contesting a dominant response (Connolly, 1995; White, 2000a).

The ethos of pluralization has direct implications for democracy. Having ontological pluralism as a core principle, weak theorizing accepts that the world cannot be explained in detail and in its entirety through a unified grand narrative that cuts horizontally and vertically through all aspects of life and social organization. There is nothing more essential in democratic politics than the idea of freedom of choice, freedom of expression, the coexistence of different interests, responses, convictions, and life stances. In that sense, weak theorizing embodies, in principle, radical democratic elements, similar to the post-Marxist ontology, without, however, looking towards a particular political outcome.

One of the limitations of White's approach is the idea that humans are the only species who produce ontology (Bennett, 2016; White, 2000a). In contrast, recent scholarship associated with concepts of new materialism has created space for the inclusion of non-human agency, recognizing the non-human as co-contibuting to shaping the world. More specifically, unlike many popular strong ontologies, which insist on presenting only the human as an active agent in world-making (Biermann & Lövbrand, 2019, p. 53), in new materialism the human is entangled with Nature in ways that make it difficult to distinguish between them (Latour, 1993). As Coole and Frost (2010) pointed out, "New materialism challenges some of the most basic assumptions that underpin modern society, including its normative belief about human agency, but also regarding its material practices such as the ways we labor on, exploit, and interact with nature" (p. 3-4). In other words, new materialism challenges the Cartesian idea of human mastery over Nature and replaces it with a relational understanding where power inequality exists; yet non-human agency is not passive. In fact, Coole and Frost (2010) understood matter as self-transformative and already saturated with agentic capacities and existential significance (p.92).

New materialism has made the unstable binary between human/Nature even more blurry. In doing so, it ascribes agentic powers and capabilities to matter, focusing on the inseparable and entangled relations within socio-material worlds. I adopt the term *socio-material relations* throughout this thesis to refer to the entanglement of human and non-human agents.

Unlike dystopian projections, where non-human agents arise to punish humans, new materialism attributes affirmative power to both the non-human and humans in the present (Connolly, 2013; White, 2000b). More specifically, new materialism acknowledges that positive change for mitigating the adverse effects of the Anthropocene epoch can happen here and now. A great array of empirical studies from scholars of different disciplines point to that fact (Bennett, 2016; Gibson-Graham et al., 2016; Tsing, 2015; Whatmore, 1999). Under this frame, the world is not only a place of grief and destruction, it is also a place where hope co-exists with the ruins created by capitalist expansion (Head, 2016; Tsing, 2015).

Choosing to do research within a new-materialist frame that assembles an ontology that does not make absolute claims about the endpoint of political struggle, and that instead emphasizes non-human agency, opens new possibilities for politics in the Anthropocene. Its novelty is that it is open to a plurality of different approaches and practices that can co-exist within the same space and time (Connolly, 2017), even if they disagree with each other. In this sense, it aligns with visions that see democracy as a political arena where a plurality of ontologies and practices can flourish (Barad, 2007; Bennett, 2016; Connolly, 1995, 2017; Escobar, 2020; Stengers, 2015).

While new materialists recognize ontological pluralism, proponents of strong ontologies are much less likely to do so – seeking to assert their worldviews and silence others. If we consider the radical changes that will occur in the coming years due to Anthropocene-related problems, such as climate change and the urgent character many political decisions will have, the rise of strong ontologies is likely to threaten democracy in ways weak ontologies do not.

The new-materialist ontology not only supports this understanding of democracy, it also proposes its re-evaluation. It provides us with the potential to consider ontological plurality as a beneficial strategy in approaching the adverse effects of our epoch. In other words, new materialism's democratic stance derives from its commitment to ontological pluralism. Instead of being another ontology that claims absolute truth, it allows multiple truths to flourish, while also challenging well-established norms about agency. If the Anthropocene is an epoch that requires us to reconsider our agency and relationship to the world around us, then we need to encourage ways of theorizing that promote alternative forms of thinking, being, and doing. However, new materialism's alliance with Anthropocene requirements for agency and democracy still does not justify democracy as the preferable means of mitigating the adversities of the new epoch. In section 2.3, I explore how current democratic institutions fail to approach Anthropocene-related problems and why a new-materialist understanding can challenge the arguments against democracy in the Anthropocene.

2.2   Anthropocene and Democracy

In the previous section, I briefly mapped four Anthropocene responses and their relation to non-human agency and democracy. In this section, I argue for the importance of democracy in informing Anthropocene responses. Recent studies in comparative politics have investigated the influence of different political regimes on issues related to the acceleration of the Anthropocene, like climate change and economic crisis. Hanusch (2018) has argued that there is a direct connection between democracy and the mitigation of the negative implications of such problems. Here, democracy refers to a form of governance based on the power vested in a plurality of politically equal citizens who participate directly or indirectly in decision-making processes. Hanusch has argued that there is a positive correlation between the level and openness of democracy and performance to environmental problems. The more inclusive, plural, and open democracy is, the better its performance in responding to ecological challenges (p. 287). On the other hand, there is substantial evidence that authoritarian regimes do worse on environmental issues (Q. Li & Reuveny, 2006). The reason why democracy manages to respond better to

environmental challenges lies in its institutional design and the plurality of responses that can optimize the final result (Fiorino, 2018). Studies have even suggested that when engaging with the non-human world, broad and diverse participation in decision-making processes leads to better collection and evaluation of information, leading to more well-informed decisions (Connolly, 2017; List, 2004, p. 168; Seeley, 2010).

Studies on citizen engagement in democratic forums about genetically modified organisms have shown that civic participation almost invariably leads to a more precautionary political decision than that adopted by political elites, who are more interested in putting technology to use in the interest of economic growth (Dryzek et al., 2009). A study by Felicetti et al. (2016) on local participation processes confirmed the effective role of civic engagement in political decisions, in contrast to decisions that are solely driven by technocratic and economic initiatives. This observation confirms the earlier point that the entanglement of technology and economic growth is a leading factor in the production of the negative effects of the Anthropocene. Dryzek and his colleagues have also noted that we need a different conception of democracy that takes into serious consideration different forms of political engagement beyond traditional top-down approaches. In other words, we need new democratic institutions that reflect the requirements of this new epoch (Dryzek & Pickering, 2019). In the context of the Anthropocene, there is a need for innovative forms of democracy that are significant at a planetary scale. However, these forms of democracy need not be those informed by the forms of democracy that dominate state-based models.

Scholarship in both international-relations literature and governance studies shows that democracy is a concept that has a better grip within a nation-state, due to a perception of the nation as the guardian of well-ordered societal structure (Glencross, 2011; Keohane, 2011, p. 100). Simultaneously, due to the lack of democratic scholarship globally, nation-state democracy becomes the frame many scholars apply on a global scale (Mert, 2019b, p. 143). In turn, the nation-state biases limit how democracy is imagined worldwide. An example of the discussion above comes through a response from Keohane (2016) to De Búrca, Kuyper, and Dryzek. In his article, Keohane argued that "no global government could ever harness the emotional support to nationalism" (p. 938). Keohane explained that the nation-state provides a space for powerful emotions to arise and affect politics, and that democratic mechanisms are absent from global scales of governance. Therefore, he added, we need to keep in place some critical democratic features, such as accountability of the elites to the people, broad participation, securing minority liberties, and deliberation processes among societal actors.

Although the projection of state democracy requires popular participation – a *demos*, there is no such political body at the global level. Some scholars consider this a significant drawback. Therefore, democracy at an international level, without the political body of the demos, looks difficult (Näsström, 2010). There are three reasons why this argument is problematic. First, supporters of democracy have invariably been invested in the idea that 'a people' always exists as a potential political body (Dahl, 1991, p. 3). Second, we already have examples of large, diverse populations that constitute modern democracies. The examples of the US, Brazil, and India are directed to that fact. And the third is that the definition of 'demos' always contains bias and exclusion (Mert, 2019a, p. 143). In an alternative scenario, where the definition of 'the people' is free of exclusions, that would potentially include the whole of the planet's population. Under this frame, the Anthropocene quickly encourages us to think of a planetary demos, since everyone and everything is perceived as interconnected and affected by the same problems.

As Mert (2019a) argued, a good starting point to think of demos globally is both conceptually and in practical terms. She noticed that, despite the blurriness of democratic theory about the topic, we could imagine and locate largely unorganized demos that could provide a basis for global governance's democratization (p. 143-144). For example, masses of people make demands about multilateral agreements at environmental forums (Chatterton et al., 2013); they protest at global financial gatherings; they meet up to protest against global elites and unequal social structures, and they also participate in international debates through social media on an everyday basis (Birks, 2014; Kioupkiolis, 2019). These are all examples of a potential basis for the construction of demos at a global level. Putting aside the logic that global democracy does not or cannot exist, allows us to think of democratic ways to govern and mitigate the Anthropocene problems that concern all the Earth's inhabitants (human and non-human).

Nation-state democracy can offer notable reflections about democratic drawbacks when thinking on a global scale. However, it is good to keep in mind that there is no inherent reason for democracy in the Anthropocene to be grounded on the same principles as that of a state (Mert, 2019b, p. 144). Democracy has been flexible with its scale transformations. The ancient Athenian democracy found its way into the French and the American Revolutions through change. A small-scale regime was adapted to fit the needs of the nation-state. Through this expansion, we also experienced the re-interpretation of participation through representation, from a form of monarchic and oligarchic privilege to a feature of electoral democracy. That was, as Mert (2019a) pointed out, a "*scalar revolution* in the history of democracy" (p.144). In other words, this experimental democratic scaling-up that had occurred in the past in order to fit into the standards of a new

regime, can be repeated in a way that fulfills the demands of global democracy in the Anthropocene.

The Anthropocene would require a democratic scaling-up and institutional adaptation in order to approach problems that engage with the non-human in different ways than occurred during the Holocene epoch. As Mert (2019a) observed:

> The Anthropocene threatens and potentially invigorates the practices of democratic governance at once; it forces us to think innovatively about democracy, to deconstruct certain traditions and learn from peripheral and marginalized knowledge-base and the non-human environment. (p. 144)

To put it another way, Mert pointed out that the nation-state need not be the privileged agent of democracy. We need to be more attentive to democracy at both the local and global levels if we are to respond to the problems of this new epoch. Simultaneously, the Anthropocene offers radically different geography, one that collapses the distinction between the global and the local. To respond to that problem, as she explained, we should re-evaluate forms of knowledge, practices, and relations to Nature that are often marginalized. To make it clear, the scholar invites us to take into consideration forms of knowledge and practices often overshadowed by the dominant political discourses and decision-making processes.

Looking into community politics, one can find many forms of marginalized knowledge and mundane practices. These politics could potentially provide solutions to problems related to the new epoch, while also functioning as laboratories where new forms of democracy can flourish (Ostrom, 2015; D. Wall, 2017; Whyte, 2018). As activists David Bollier and Silke Helfrich (2019) argued, the advantage of community politics in comparison to global and state formations is their ability to compartmentalize a problem and approach it at its root. This means two things. First, that community politics can help in challenging particular Anthropocene-related problems, such as deforestation or water depletion, in multiple local contexts; and second, that there is an interrelation between scales, since local problems such as deforestation or water depletion in a particular location are manifestations of a global trend. The challenge is to find ways of engaging in democratic community politics that engage with more-than-human issues in novel ways and that can be networked and built upon to influence and counter global processes. In the next chapter, I focus upon commoning as a set of practices and approaches that can contribute to this goal.

Conclusion

Sustaining democratic institutions in a radically changing socio-ecological environment requires us to look into forms of knowledge, doing, and being that are often marginalized. This is a kind of politics one can locate at a local scale. Realizing that global problems like the ones of the Anthropocene epoch are expressed differently in different social contexts, makes clear that the new epoch is a multi-scalar phenomenon, and that it requires a different kind of politics than emerged during the Holocene. As I point out in this chapter, the political transformation needs weak theory and weak ontology, being open to multiple political debates.

In section 2.2, I show the possibilities and limitations of four popular ontologies in regard to agency and democracy. I argue that the inclusion of multiple knowledges, modes of being and doing in the Anthropocene can contribute to a better way to respond to the problems of this epoch. This ethos of pluralization can further help to understand alternative views about human relation to Nature (Hulme, 2014). The goal of political institutions should be to expand participation, allowing an open engagement of knowledge even if this entails developing antagonisms. Enabling an opening of politics to society, communities, nations, and global stakeholders could find more resources for mitigating and preventing the local manifestations of problems related to the Anthropocene.

The biggest challenge to democracy and democratic institutions of our times concerns how people respond to continuous displacements occurring as a result of the grave disturbances of social and ecological environments of this new geological epoch. The urgent conditions and the significant uncertainties of current economic, political, and environmental institutions can potentially carry with them emotions of deep and widespread fear and insecurity. The sustainability of democratic institutions in the Anthropocene depends primarily on how they will enable a different relationship between decision-making processes and participation strategies.

My suggestion is that, to be able to shift away from human exceptionalism and to develop strategies that bridge the gap between decision-making processes and democratic participation in the Anthropocene, we need to make visible responses that promote non-human agency. We also need practices that will embody new-materialist values and infuse current political institutions with this new ethos. To locate this political alternative in the next chapter, I turn to explore the political possibilities that could arise from the promising terrain of commoning as a form of collective care.

Chapter 3:
Approaching Commoning in the Anthropocene

In the previous chapter, the focus was on exploring an ontology that can respond to the problems posed by the Anthropocene. While the appropriate ontology is a necessary condition for responding to these problems, it remains limited without the praxis that can infuse democratic institutions, value systems, and ethical stances in new and more sustainable ways. More specifically, to respond to the central question of my thesis, I need to locate a praxis that reflects the principals and values of new materialism.

My first encounter with commoning was when I realized that a diverse body of scholars had started raising concerns about the future of democratic politics in periods of extended social, economic, and environmental crisis (Chatterton et al., 2013; Hardt & Negri, 2005; Kioupkiolis, 2019; Varvarousis & Kallis, 2017). To be more precise, due to a widespread discomfort about top-down democratic politics in times of multiple social and environmental upheavals (Coughlan, 2020; Foa et al., 2020; Van der Meer, 2017), I turned to commoning as a way of exploring politics from the ground-up. The first aim of the present chapter is to make the connection between new materialism and commoning clear. By doing this, I aim to show three things. First, how commoning meets the ontological requirements of the new epoch; second, how commoning can be a potential political tool that responds to Anthropocene-related problems, and third, how commoning can respond to Anthropocene-related problems while enabling democracy to flourish.

My focus on commoning is as a result of two major observations. First, I argue that commoning provides a possible means of successfully challenging local manifestations of Anthropocene-related problems, such as climate change, global warming, and biodiversity loss (Gibson-Graham et al., 2016). Second, as the political economist Elinor Ostrom (2015) suggested, commons can function as laboratories that can help to maintain and enrich our democratic institutions (as cited in Kioupkiolis, 2019; as cited in D. Wall, 2017). More specifically, inspired by an extensive literature about commons and commoning, I position myself within a tradition that understands commoning as assemblages tied together through practices of collective care (Gibson-Graham et al., 2016; Parris & Williams, 2019). The reason for choosing this understanding of commoning is based on political theorist Joan Tronto's (1993, 2013, 2015, 2017) observation that, under particular conditions, collective care can lead to a democratic revolution. This definition of commoning includes focusing upon the everyday bodily experiences and local

environments that we seek to weave into life-sustaining assemblages (Bresnihan, 2016a; Puig de la Bellacasa, 2010; N. M. Singh, 2018). In that sense, I focus on commoning as those practices of collective care that constitute and reproduce assemblages of the human and non-human that would create opportunities within this new epoch for substantially improving the conditions of living.

In the first section of this chapter, I review the three major commons traditions, or lines of thought, to show the possibilities and limitations of each tradition, and to justify why I choose the tradition that ties commoning and new materialism together. In the second section, the goal is to provide a framework for distinguishing the commoning practices of collective care that contribute to the mitigation of Anthropocene-related problems from the ones that fail to do so. To do this, I utilize Power's (2019) three-dimensional model of caring capacity. I also draw inspiration from Gibson-Graham et al.'s (2013) "Commons Identikit" in which the scholars described the relation of commoning with property arrangements and care. Through Power's model, I analyze the socio-material, spatial, and temporal dimensions of care. It is important to notice that all three dimensions are inextricably entangled and are presented separately only for analytical reasons. Each dimension works as a lens that explains how specific forms of commoning contribute differently to Anthropocene-related problems, having different capabilities and limitations. I conclude the chapter by setting the stage for the methodological approach upon which I then analyze my four empirical chapters.

3.1   The Three Commons Traditions

In 2012, Elinor Ostrom suggested that the Anthropocene creates a new responsibility for humans towards the planet (as cited in Stafford-Smith et al., 2012). More and more scientists, activists, artists, and politicians have recently mobilized to demand political change towards a sustainable planetary future (Nisbet, 2014). Within this frame, commons and commoning are presented as a way to approach local manifestations of problems related to this newly suggested epoch, such as climate change and economic crisis (Armiero & De Angelis, 2017; Gibson-Graham et al., 2016), and a way that potentially enriches democratic politics (De Angelis, 2017; Monbiot, 2017b, 2017a; Ostrom, 2015; D. Wall, 2017). This understanding follows environmentalist and activist observations that global problems are better approached locally (Barash & Webel, 2002).

In this section, I review the basic traditions of *commons-thinking*. I start with the tradition of *common-pool resources* (Ostrom, 2015) or, as some scholars call them, *environmental commons* (Dawney et al., 2016), focusing on material property regimes and how to manage resources. Then

I move to the *immaterial commons*, such as knowledge and intellectual property. Finally, I move on to the *relational commons*, which refer to an assemblage constituted upon the performative activity of commoning with a significant focus on collective care.

3.1.1   Common-Pool Resources or Environmental Commons

The idea of commons is not new. Aristotle (4th century BC/1996) noticed that shared ownership could lead to overuse of land resources (p. 33). Early Judeo-Christian tradition entailed a conception of the Earth as a commons that could provide for all beings (Hart, 2006). Similar arguments find their way into the current understanding of commons, projecting a view of collective life, a world in common shared between human and non-human, who all share Nature's wealth in respectful and sustainable ways (Reid & Taylor, 2010, p. 8). Moreover, in England, commons are historically depicted as grasslands where peasants made a living through animal pasturing, food collection, fuels, and other materials (Linebaugh, 2008; Marx, 1867/1992; Neeson, 1996; Thompson, 1966). Later, in the United States, the Commonwealth of Massachusetts was a territory where a commoners' collective had the legal power to assess taxes, elect officers, and vote laws to govern their domain (O. Handlin & M. F. Handlin, 1969; Huron, 2015). With this understanding, the concept of commons became heavily associated with physical space, sea, and acres of land, which we might recognize as Nature's bounty (Dawney et al., 2016, p. 6). Some significant examples of these are fisheries, land pastures, and forests rich in natural resources for different human uses and husbandry (Heynen et al., 2007; Vogler, 2000).

However, much of the discussion about environmental commons or common-pool-resources in the last 50 years was triggered by Garett Hardin's famous 1968 thesis *The Tragedy of the Commons*. Hardin described a group of herders sharing an unregulated grassland to which each had unlimited access. He then argued that since each herder endeavoured to maximize their livestock, this inevitably led to resource exhaustion to the point of collapse (1968). For him, the possible solution was that the land be enclosed as private property, or that the government be allowed to regulate and manage it as public property (as cited in Bollier & Helfrich, 2019, p. 51; De Angelis, 2017, p. 144). Hardin's assumptions dominated debates amongst economists, social scientists, and politicians, and influenced policy-making processes for decades (De Angelis, 2017). Eventually, in the 1970s and '80s, the discussion about commons was based around problems of limited-resources management, growing populations, and the forms of material poverty they put at risk (Dawney et al., 2016, p. 1). The focus on how to manage collective resources became the first modern tradition of commons literature.

In 2008, Ostrom received the Nobel Prize for her seminal thesis, *Governing the Commons*, which disapproved Hardin's theory by arguing that the commons are not unregulated grasslands but property regimes regulated by particular communities that produce, manage and distribute specific common goods (De Angelis, 2017; Ostrom, 2015). Ostrom showed that many communities across the globe could successfully manage resources that had been produced and shared in common (Hanna et al., 1996; McCay & Acheson, 1987; Ostrom, 2015; Schlager & Ostrom, 1992). Moreover, the scholar noticed that the way one interprets why resources are degrading and how to manage this problem is a fundamental basis for constructing and seeing the world (Bresnihan, 2016a, p. 93). Ostrom argued that attributing trust to people who can collectively manage their resources efficiently leads to political outcomes that are different from those based on the belief that people need an external authority to manage their resources because the collective is incapable of doing so. Thus, according to Ostrom, environmental commons are systems of collectively managing resources antagonistic to public and private sectors, which are based on the authority of the state or the market, respectively.

Ostrom (2010) points out that a successful and sustainable environmental commons is based on eight design principles. These are: 1) Every environmental commons has clearly defined boundaries. 2) The members of the commons must agree to a reward system. The social recognition of each member must be earned. 3) All group members should participate in decision-making processes. 4) Setting up mechanisms of monitoring the activities and the different members to avoid the commons' collapse. 5) Gradual punishment for different kinds of non-acceptable behaviors in the community. 6) Setting up conflict resolution mechanisms to minimize tensions between community members. 7) Minimal recognition of the right to protest against a decision. 8) Optimizing the scale of operation. The final design principle refers to the idea of compartmentalizing complex problems into smaller ones and delegating specific responsibilities to groups closer to the problem at hand. The importance of Ostrom's work was so significant that many of the design principles were incorporated into management policies in the 1990s and 2000s. Models of community management in various social contexts were partially utilized as essential policy instruments for successfully managing natural resources (Agrawal, 2003; Leach, 2008).

Michael Hardt (2010) noticed that the common-pool-resources tradition is focused on the finite nature and the scarcity of material resources, including the atmosphere, the forests, waters, and the forms of life interacting with these natural elements (Bresnihan, 2016a, p. 94). For the common-pool-resources scholars, the fundamental principle is that the property where the material resources are collectively managed should also be collectively owned (Bollier & Helfrich, 2012, 2019; Dietz et al., 2003; Mansfield, 2004; Tummers & MacGregor, 2019). This approach refers to

the establishment of common property protected and safeguarded from public and/or private property regimes (Gibson-Graham et al., 2016). According to this line of thought, commons as material spaces are purified from the ills of capitalism, including competition and individualism. These spaces are imagined to be driven by the values of conviviality, solidarity, horizontalism, and radical democracy (De Angelis, 2017; Deleixhe, 2018; Dolenec, 2012; Hardt & Negri, 2012; Kioupkiolis, 2017, 2019).

A critique of the common-pool-resources line of thought is that it focuses extensively on non-humans as resources to be collectively managed (Bresnihan, 2016a; Gibson-Graham et al., 2016). In other words, non-humans are constructed as objects to be used by a human community for production management and distribution as common goods. This underplays the agency of non-humans in shaping the commons, as more recent work in vital materialism or more-than-human geographies has argued. Another criticism of the common-pool-resources tradition is that it reproduces its critiques' basic assumption, meaning that individuals will unavoidably destroy common pool resources without specific rules and regulations. A crucial role in this formulation is the continuous need for some property rights to shape individual behavior (Dietz et al., 2003; Goldman, 2005). Some argue that thinking of commons through property regimes perpetuates and encourages methodological individualism and maximizing strategies associated with neoclassical economic theory on resource management (A. McCann, 2004, p. 7). The result is that common-pool-resources tend to naturalize particular subjectivities and behaviors, ignoring the historical emergence of capitalist relations within specific social contexts and can hide the complexity of non-capitalist relations and subjectivities that exist alongside capitalist relations and subjectivities (Mansfield, 2004). Despite its limitations, the common-pool-resources or environmental tradition of commons contributed to the regeneration of a significant field of research that had political value for challenging a world dominated by the logic of economic growth. The following tradition shifts the focus from the production and management of common material goods to the immaterial production and management of common goods.

3.1.2 Immaterial Commons

A second popular tradition of commons literature focuses on the immaterial commons. This refers to immaterial resources collectively produced and managed (Hardt & Negri, 2011). For example, this tradition refers to the production of collective intellectual property that includes the production of language, knowledge (Hardt & Negri, 2011), culture (Hyde, 2010), digital commons (Fuster Morell, 2014), and peer-to-peer production and networking (Bauwens et al., 2019;

Bauwens & Jandrić, 2021). The immaterial commons are based on a perception that human labour and creativity have unlimited and infinite capacity to reproduce collective forms of immaterial property. Commons intellectual property becomes observable in those processes of capitalism that exploit the immaterial wealth produced by a commons community in favour of the reproduction of capitalist social relations and values (Benkler & Nissenbaum, 2006; Dawney et al., 2016; Dyer-Witheford, 1999; Hardt & Negri, 2011; Vercellone, 2007).

A common element linking different immaterial commons is their analytical differentiation from environmental commons. Political philosopher Michael Hardt (2010) argues that immaterial commons do not operate under the logic of material scarcity as environmental commons do. While the environmental commons emphasize the limited material resources humans depend upon, immaterial commons focus on the social wealth produced through immaterial resources essential to the production and reproduction of contemporary capital accumulation. One example is the collectively produced open resource software language Linux which became the basis of the software Google uses to produce Android software and profit from it (De Angelis, 2017). The fundamental characteristic of immaterial commons do not depend and are not bound to material limitations, but they become infinitely reproducible and susceptible to all kinds of technological innovations. As with environmental commons, an immaterial commons comprises every form of immaterial resource, from language and knowledge to software and peer-to-peer production that could be collectively produced, managed, and distributed. Unlike environmental commons, however, immaterial commons are perceived as inextricably entangled with the capitalist mode of production and exist in relation to it (Dawney et al., 2016, p. 13).

The critique of this tradition is that while the distinction between environmental-natural and immaterial-social can be helpful for analytical purposes, it nevertheless obscures a reading of commons-based on the inseparability and continuity between these categories (Bresnihan 2016b). While environmental and immaterial commons focus on the production, management, and distribution of different forms of resources, they both approach non-humans as a resource and an object rather than an agent of collective change. For example, the proponents of this tradition overlook the importance and the agency of valuable metals in the process of assembling a computer when designing a software language. It is the agency of metals than enables and limits computer programming. The importance of bringing the environmental-commons tradition and the immaterial commons tradition closer has been noted by Bauwens et al. (2019) as well. They envision peer-to-peer production as a way to challenge the capitalist economy by creating a system that depends on the infinite production of immaterial resources while at the same time allowing

the regeneration of material resources. However, this approach overlooks the tension between the material requirements from the production, reproduction, and expansion of a system that aims to challenge the capitalist one.

Despite the drawbacks of immaterial commons tradition, there are valuable lessons about the unlimited abilities and capacities immaterial commons must produce, manage and distribute the collective products of human and non-human interactions. The following commons tradition brings a different reading to the relationship between environmental and immaterial commons.

3.1.3   Relational Commons: The Commoning Assemblage

The third tradition of commons challenges the dichotomy between material and immaterial commons. This approach to commons is prominent within feminist debates (Federici, 2011a; Mies & Bennholdt-Thomsen, 1999, 2001; Shiva, 2010), human geography (Blomley, 2008; St. Martin, 2009), and historical analysis (Barrell, 2010; Linebaugh, 2008, 2010; Neeson, 1996; Thompson, 1993). According to this tradition, as historian Peter Linebaugh (2008) argued: "To speak of commons as resources (material or immaterial) is misleading at best and dangerous at worst. The common is an activity, and it expresses relationships in a society that are inseparable from relations to nature". For that reason, he suggests using the word as a verb, "*commoning*" (p. 279). In this understanding, the focus shifts from finite resource management and the infinite production of immaterial commons, to practices and relations between socio-material agents, and explores the limitations and possibilities produced by grounded everyday collective practices of commoning (Bresnihan, 2016b; Gibson et al., 2015; Gibson-Graham, 2008; Gibson-Graham et al., 2013, 2016; Grear, 2020; Parris & Williams, 2019; M. J. Williams, 2018; Zapata Campos et al., 2020). What brings a relational commons into being is the commoning practices of collective care (Bresnihan, 2016a; N. M. Singh, 2017). Commons are then produced through and by commoning as collective practices of care by a community of human and non-human agents (M. J. Williams, 2018). Gibson-Graham et al. (2016) referred to relational commons as "*commoning assemblages*" (pp. 207-208). More specifically, the relational commons are an assemblage comprised, for example, of social movements, technological advancements, institutional arrangements, humans and the non-human, that bring the commons into being through commoning practices. From now on, when I refer to a 'commoning assemblage' in my thesis, I mean the relational commons. This is the tradition I have chosen to work with in my project.

COMMONING IN THE ANTHROPOCENE

According to Bresnihan (2016b), the identification of commons as a relational concept overcomes a long history of invisibility. This invisibility transpires through the setting aside of forms of knowledge and effective ontologies from those dominant worldviews that connect the idea of societal progress and wellbeing with an endless accumulation of economic growth (De la Cadena, 2010; Gibson-Graham et al., 2016; Kallis, 2017). Scholars point out that commoning directly relates to ontological pluralism, especially with those forms of knowledge, being, and doing that are often marginalized. The relational approach to commons can help us explore more thoroughly what is happening in relational and multispecies contexts and worlds (Gibson-Graham, 2008; Gibson-Graham et al., 2016). There is a variety of scholars, especially those oriented towards Indigenous cosmologies, anthropologists and historians (Brody, 2001; De la Cadena, 2010; Escobar, 2012; Linebaugh, 2008; D. B. Rose, 2004; N. Rose, 2006; N. M. Singh, 2018; Thompson, 1993), as well as post-humanists and new-materialist scholars (Barad, 2003; Bennett, 2010; Papadopoulos, 2012; Puig de la Bellacasa, 2011, 2017; Stengers, 2010), who aim to shift the methodological and epistemological lens towards relational ontologies and caring responses that include both the human and non-human (Barad, 2003).

Commoning aligns with new-materialist ontologies by supporting an openess to a diversity of practices with no fixed endpoint. It is inclusive of practices, life stances and ways of thinking that often exist on the margins of the dominant ways of doing things and thinking, such as striving for economic growth. Gibson-Graham et al. (2013) have revealed, through their empirical research, a universe of community economies and commoning practices that are often overlooked. Yet, these activities are the ones that simultaneously challenge and support the capitalist economy. For example, solidarity networks, food and time banks, and producer cooperatives depend on a diverse range of values, ethical stances, forms of knowledge and doing that are based on care rather than economic growth (Gibson-Graham et al., 2013). Escobar (2018) placed relational commoning into a pluralistic universe, recognizing that commoning engages in a politics that brings about a world consisting of many worlds, each with its own ontological and epistemic grounding (Escobar, 2020).

Secondly, commoning involves labour produced by an assemblage of diverse human and non-human agents that collectively produce commons through their caring activities (Bresnihan, 2016a). More-than-human thinking, in the context of the commons, means shifting our focus into contexts where human and non-human agencies are intimately shared, cared for, and utilized within a collective (2016a, p. 95). As Gibson-Graham et al. (2016) noticed, the commoning collective is a more-than-human assemblage that may include:

> Class but also non-class alignments; they may include social movements and grass-roots organizations but also governments, institutions, and firms; they may include non-market mechanisms but also markets; they may include animate beings who have nothing in common except breathing and living, but also inanimate entities that share an existence on this planet. (p. 207)

They can also be soil entities, bodies of water, trees, the climate, seeds, plants, kitchen, couches and a cup of tea (Parris & Williams, 2019, p. 3). I use the term *commoning assemblage* to acknowledge the human and non-human others that dynamically constitute and care for commons.

The final point focuses on the relationship between commoning and the democratic elements reflected in new materialism. This has to do with the ethos of pluralization (Connolly, 1995) and Ostrom's (2015) observation that commons can function as laboratories for democracy to flourish. The idea that I develop here stems from the logic that commons are all about power struggles and asymmetries negotiated amongst the commoning participants (Deleixhe, 2018; Dolenec, 2012; Kioupkiolis, 2017, 2019; Reid & Taylor, 2010). These power struggles and asymmetries result from the plurality of values and ontologies that co-exist within a commoning assemblage. The importance of this discussion is that the plurality of values and ontologies emerge from performing commoning. This plurality within a commoning assemblage is a precondition for democratic responses to particular problems a community faces. However, to establish the democratic character of a commoning assemblage, it is required that the institutions developed by the community focus on mitigating power asymmetries within the assemblage. Since this is a political task, the struggle is always ongoing and open to evaluation. The ability to allow a plurality of values and ontologies to co-exist while also regulating power asymmetries is a criterion for evaluating the importance of commoning assemblages for democratic politics. Evaluating the democratic potentiality and importance of different commoning assemblages is the first step toward understanding and exploring how commoning assemblages can challenge the monopoly of power and the promotion of economic growth.

Through the three points above, I have tried to show that new materialism can be aligned with relational commoning on the grounds of agency, pluralism, and the challenge they pose to the dominant ways of thinking and doing. Commoning is a praxis that can bring into politics forms of knowledge and creative responses that challenge the dominant pursuit of economic growth. Commoning can open a dialogue between different stakeholders and force them to negotiate Anthropocene-related problems within a broader canvas of information and understanding. This does not mean that responses that put economic growth as a priority should be eliminated. Instead,

it means that, in order to respond to Anthropocene-related problems, we need more than a politics that takes only the maintenance of the status quo into consideration. What we also need is to infuse politics with ways of thinking, being, and doing that prioritize care for the environment, local forms of knowledge, local traditions, existing social and economic activities of small-scale, as well as recognizing the importance of non-human agency in responding to the problems of the new epoch. In this sense, commoning can contribute to collective flourishing, meaning the wellbeing of all agents, and their agencies, that sustain life on the planet.

Pursuing this particular line of thought on the commons does not mean I discard other commons traditions. Rather, I stand critically respectful of the other traditions, valuing and accepting arguments and critical insights that can contribute to furthering the development of theory and praxis of living well in the Anthropocene. Informed by both anthropological research and political theory, my understanding of commoning is that of messiness that occurs from its performative character recognizing the influence of capitalist and non-capitalist relations in forming an assemblage. Commons, under my reading, are defined by performance and process rather than their political leanings and should be analyzed as they exist in a variety of imperfect but interesting forms rather than assessed according to how well they meet a particular ideal form. The commons are the outcome of negotiations between humans and non-humans and are influenced by broader hegemonic formations and a place's particular political, social, economic, and environmental conditions. At the same time, I understand commons' democratic, egalitarian component as an essential political possibility that is always negotiable within and between the agents of a commoning assemblage.

In doing so, I adopt an empirical and geographical approach to the commons and commoning that differs from more idealized forms promoted by radical democratic readings in which the democratic, egalitarian component is at the center of a commons (Deleixhe, 2018; Kioupkiolis, 2019). For example, we have the experience of commons, based on peer-to-peer bitcoin production in which individuals cooperate with the expectation to maximize economic profits for their individual interests (Fama et al., 2019). Driven by an urge to prioritize economic growth, peer-to-peer cryptocurrency producers not only contribute to a tremendous ecological cost through their materially costly transactional processes (Malmo, 2015) but also reproduce hierarchical social divisions produced by economic antagonisms between the members of this commoning assemblage (De Angelis, 2017, p. 73). Therefore, a reading of commoning as procedural, performative, dynamic, and messy aims to justify why the concept extends to a wild diversity of practices, including those supportive of capital accumulation. Furthermore, while the concept displaces the democratic egalitarian component from the heart of commoning, it does not

discard the democratic radicality that commoning assemblages can potentially produce for politics in the Anthropocene.

3.2   Commoning and Practices of Collective Care

Tronto (1993, 2013) approached care as a fundamental practice in repairing, reproducing, and maintaining all kinds of relations and assemblages. Everyone participates, one way or another, in caregiving and care-receiving processes (Tronto, 1993, 2013). However, different participants in an assemblage require and receive different degrees of care at different times and across different spaces (Lawson, 2007; Tronto, 1993). This is a recognition that power and care responsibilities are unevenly distributed within assemblages and amongst those participating in a relationship (Nightingale, 2019; Power, 2019; Tummers & MacGregor, 2019).

The idea of using the term *assemblage* is inspired by Jane Bennet. According to Bennett, an assemblage is an ad hoc and fluid collection of diverse agents and agencies (Bennett, 2010, p. 23). The idea behind this definition is that an assemblage is constituted upon associations of vibrant matter. As explained earlier, *matter* refers to the core material of which everything is made, human and non-human. Its vibrancy is through an understanding of it as agentic, meaning the power produced through the interactions with other members of the assemblage (Buchanan, 2021). Anthropocene debates encourage us to notice that agency is not distributed equally between the members of an assemblage. For example, humans seem to carry a significant kind of agency that affects the operation and function of an assemblage. Assemblages can be found anywhere around us; our world is comprised of all kinds of different relations amongst humans and the non-human. An assemblage can include stakeholders at an international level, like the European Union; at the national and local level, such as the state and municipal authorities; a private company; a labour union; social movements; individuals; machines, as well as the non-human, animal, and plants, all of which bring into being a particular kind of social organization.

A *commoning assemblage* is a particular kind of assemblage of human and non-human agents involving a community constituted through commoning practices of collective care (Borch & Kornberger, 2016; Bresnihan & Byrne, 2015; Fournier, 2013; M. J. Williams, 2018). Collective care is a particular kind of care that is reciprocal and develops new kinds of collective understandings, relations, and identities between those performing it. Under this light, a commoning assemblage is a social formation within which new kinds of collective identities, understandings, and relations develop amongst practicing participants who bring the assemblage into being. The elimination of the practices of collective care means the dissolution of this assemblage. In that sense, the reference to the assemblage points to the idea that an assemblage is

a fluid union of heterogenous agents (Anderson et al., 2012; McFarlane, 2011b). Seeing commons as an assemblage challenges the established notion that a commons community has a stable form (Bresnihan, 2016a).

Tronto (2013, 2015) argued that a problem within many societies is how politics is dominated by political positions that promote worldviews and practices of care that encourage the formation of assemblages that are preoccupied with economic growth. Such assemblages have been seen as something to strive for, which may explain why many states encourage their formation, especially since economic growth, at least since the Industrial Revolution, has been understood as being a precondition for the improvement of collective living conditions (Castells, 2017; D'Alisa et al., 2015; Jackson, 2017; Kallis, 2017; Puig de la Bellacasa, 2011; Victor, 2008). As Maria Puig de la Bellacasa (2015) pointed out, the urge for achieving economic growth as a precondition for collective wellbeing expresses a progressivist vision that political decision-makers have predominately adopted during the last three centuries (Lawrence & Churn, 2012; Polanyi, 2001; Schrader, 2012).

But the formation of assemblages that are preoccupied with endless economic growth does not come without cost. Puig de la Bellacasa (2015), amongst others, has argued that modernity's dream of progress is the reassembling of human and non-human relations in a way that has economic value and meaning (Lawrence & Churn, 2012; Lefebvre, 2004; Schrader, 2012; Smith, 2001). This represents the promotion of relations between humans and non-human that are always measured by their economic value and meaning. Consequently, social practices and behaviours that are not primarily driven by economic motives are perceived as backwardness (Puig de la Bellacasa, 2015, p. 709). Tronto's (2013) response to the problems generated by faith in economic growth lies in practices of collective care. The scholar has argued that collective care can disrupt the usual rationale behind how we define the premises of living well.

As stated at the beginning of the chapter, Tronto (1993, 2013, 2015) has defined care as everything we do collectively to maintain, reproduce, and repair our world so that we can live within it as well as possible. Within this definition, the scholar has identified five interconnected stages of care: *caring about*, *caring for*, *giving care*, *receiving care,* and finally, *caring with* (Tronto, 2015). The first, *caring about,* refers to identifying unfulfilled needs, such as how parents care about fulfilling the basic needs of those of their children who are unable to work. Once the unfulfilled needs have been spotted and identified as a problem, we move to the next step. *Caring for* points to the process of taking on responsibility for the problem spotted. This is the stage where the parents, for example, claim responsibility for feeding and sheltering their children. The third

one, *giving care*, goes a step further, as it refers to becoming competent to offer care to those humans and non-human identified as in need. *Receiving care* is about becoming responsive to the outcomes of care. That means that the receiver of care should be able to feel and realize the benefits of the offered care. Being aware of the benefits of care-receiving is a means to discovering the possibilities of what to do next (Tronto, 2015, p. 8). For example, the satisfaction one receives from the provision of care makes it easier for someone to realize how to reproduce the conditions of receiving care in the future. Lastly, Tronto (2013, 2015) identified the fifth stage of care, *caring with*, which refers to the political dimension of care. It is this reciprocal form of practices of care that develops and takes place amongst a diverse assemblage of humans and the non-human world at a communal/collective level. Tronto (2013) pointed to the fact that *caring with* is both a performative practice and an ethical disposition that aims to reach out to something other than the self (Midgley, 2016; Parris & Williams, 2019; Power, 2019). As Power (2019) has noticed, *caring with* has broader significance as a practice of communal solidarity, collective responsibility, mutual aid, and trust that is generated by performing and learning to care collectively (Tronto, 2017).

As Tronto (2017) has noticed, *caring with* offers an ontology different to one that perceives the human as *Homo-economicus* (p.37). Instead of thinking of the human as a rational creature who seeks to maximize economic growth, *caring with* starts with the premise that people and the non-human are interrelated, that we are not only rational but also fragile and vulnerable creatures, and, for that, we are all caregivers and care-receivers. Furthermore, what is exceptional about *caring with* is that it recognizes that every citizen is engaged in a lifetime commitment to and benefiting from care (Mcdowell, 2004; Sevenhuijsen, 1998, 2003; Tronto, 2015). Scholars working with the relational understanding of commons utilize Tronto's definition of *caring with* to describe commoning practices (Kohtala et al., 2019; Parris & Williams, 2019; Tummers & MacGregor, 2019). Understanding commoning as a practice of *caring with* echoes what Elinor Ostrom (2015) has described as commons being laboratories for enriching democracy. Under this light, *caring with* should be understood as collective practices where solidarity, trust, mutual aid, and democracy can flourish and challenge the hegemonic positioning of humans as creatures solely preoccupied with maximizing economic growth.

While I share a general understanding of Tronto's (2015) five stages of care, I argue that certain forms of commoning as collective care also exist within assemblages that are preoccupied with care for economic growth. Collective care is vital for the survival and reproduction of economic assemblages (Federici, 2012). What makes these economic forms of collective care distinct from other commoning forms is that they suppress the ability to reach the final caring
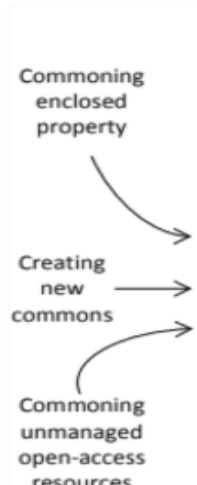
stage, that of *caring with*. That means that these forms of care do not challenge the dominance of economic growth, instead they reproduce it. More specifically, and as I show in my empirical chapters, commons that are about economic growth are in tension with the non-human world, as the damage they do to it in spatial and temporal terms is greater and more intense than the ways they nourish it. In other words, assemblages preoccupied with an urge for economic growth limit the ability of their agents to relate to each other and to become attentive towards the world around them.

It would be odd for such commons to seek to destabilize the political and economic conditions that allow them to flourish. My understanding is that commoning possibilities are narrower in an assemblage that is preoccupied with economic growth than in an assemblage that does not depend primarily on economic growth. To put it in other words, not all forms of collective care contribute to the disruption of the modes of being, forms of knowledge, and practices that contribute to the production of the Anthropocene. Not all forms of collective care are practices of *caring with*. Assemblages that enable *caring with* also carry the seeds of political change or can challenge the existing political and economic status quo. They do that by infusing politics with acts of mutual aid, trust, and solidarity (Tronto, 2013). These values, and the ethos they carry within, are unfamiliar to the values of an assemblage preoccupied with economic growth, which is essentially based on individualism, competition, and profit (De Angelis, 2017). Gibson-Graham et al. (2013) have noticed that commons can be part of broader assemblages preoccupied with achieving endless economic growth. These assemblages are often the ones related to enclosed property regimes where access to them is narrow; use is restricted by the owner; the benefit goes only to a few privateers; care is performed by the employees; responsibility is assumed by the owner, and the ownership depends on the design of the assemblage (see Figure 3.1). In contrast, assemblages that are not preoccupied with economic growth allow for a diversity of values to emerge and flourish, allow access to a broad variety of agents, and encourage use of resources by a community of different stakeholders, while the benefits produced in them are distrusted widely amongst those participating and the society as a whole. At the same time, caring responsibilities are performed by all community members, while there is no clear limitation to who can participate, or to which kind of ownership defines the limits of a commoning assemblage. Focusing on the forms of commons that allow for a plurality of values and modes of being to flourish is a precondition for improving democratic politics in the Anthropocene. The following Figure 3.1 shows in detail the different types of commons and their functionality.

Figure 3.1

Commons Identikit

	Access	Use	Benefit	Care	Responsibility	Ownership
Commoning enclosed property	Narrow	Restricted by owner	Private	Performed by owner or employee	Assumed by owner	Private individual / Private collective / State
Creating new commons	Shared and wide	Negotiated by a community	Widely distributed to community and beyond	Performed by community members	Assumed by community	Private individual / Private collective / State / Open access
Commoning unmanaged open-access resources	Unrestricted	Open and unregulated	Finders keepers	None	None	Open access / State

Source: Gibson-Graham et al. (2013, p. 148)

Having as a goal the improvement of democratic politics in this new epoch (Power, 2019; Tronto, 2015, p. 14) does not mean ignoring that power and care inequality produce exclusions and the inability for everyone to participate in decision-making processes equally. For example, feminist scholars have recognized that, for centuries, care has been invisible and perceived as a characteristic attributed to women, people of colour, the poor, and migrants, meaning people heavily excluded from the public sphere and political affairs (Federici, 2011a, 2011b, 2012; Hochschild, 2012; Tronto, 2013, p. 141). Care involves time-consuming processes that force people to remain outside of the political arena. Therefore, not all people have the same ability and time to participate in democratic processes. Instead, relations of care take place in messy, exploitative, and unequal worlds, where care and wealth are unevenly distributed, where public policies are not necessarily supportive of collective care, and where some people are overburdened with caring responsibilities (Power, 2019, p. 767).

To help articulate the element of difference within commons, Noterman (2016) developed the idea of *differential commoning*. This refers to the various and contradicting interests and motivations held by commoning participants, and the unequal nature of the labour they perform to produce the assemblage. Individual participants take on different levels of responsibility in caring for the commons, resulting in an unevenness in the distribution of the labour required to sustain a particular formation (Noterman, 2016). This power imbalance can shape decision-making processes within such an assemblage. In that sense, a commons' internal structure is defined by its participants' understandings, subjectivities, and the institutional procedures they collectively design. As I show in Chapters 6 and 7, even different *commoning-as-caring-with* assemblages

express their political dimension differently. While some of them openly aim to challenge a particular mode of being, others are not designed with a confrontational profile and instead carry the seeds of political change through everyday livelihood practices.

In the next section, I utilize Power's (2019) three-dimensional frame of collective care, designed to explore the depth of caring capacity. I do that in order to show further how *commoning-as-caring-with* assemblages might look like in spatial and temporal terms. I also show how this kind of commoning differs from commons included in broader assemblages preoccupied with economic growth. This is a conceptual framework that helps to elucidate which practices of collective care carry the seeds of political change for challenging destructive political modes in the production of the Anthropocene epoch.

3.3   The Three Dimensions of a Commoning Assemblage

As Power (2019) has pointed out, *caring with* advances three frames in which to conceptualize caring capacity. Firstly, *caring with* situates care in a socio-material and performative frame. Secondly, it theorizes the production and translation of care across space, as well as scale. Thirdly, it places care in a temporal frame, speaking to the historical and generative depth of relations that are the foundation of future forms of care. I explore each of these dimensions below and have used them to inform my analysis of the case study.

3.3.1   The Socio-Material Dimension of a Commoning Assemblage

The socio-material dimension of commoning explores the question: Whom are the participants in the caring formations that produce a commons? The commoning assemblage consists of heterogeneous agents that come together in a non-homogenous grouping (Anderson & McFarlane, 2011, p. 125). Examples of agents that participate in the formation of a commons can be meanings, beliefs, and symbols, together with material agents, such as bodies, institutions, technologies, objects, governments, animals, plants, and settings (Dombroski et al., 2019; Fenwick, 2014; Fenwick & Dahlgren, 2015; Gibson-Graham et al., 2013, 2016, p. 193; Roelvink, 2013; Roelvink et al., 2015; M. J. Williams, 2018). Each of the different agents carry properties that affect the composition of the specific assemblage (Anderson et al., 2012; De Landa, 2006).

A second socio-material dimension is performance. *Caring with* denotes a performative action concerned with the (re)production of a vibrant community that presents humans and the non-human as co-constructors of everyday mundane worlds through practices of collective care

(Barad, 2003; Bennett, 2010; Bresnihan, 2016a, 2016b; Escobar, 2018; Murray Li, 2007; Power, 2019). Practices of care are often humble practices or gestures, like kind words, offering of shelter and hospitality, providing food and joy (Horton & Kraftl, 2009; M. J. Williams, 2018). Commons are performed through intentional and spontaneous acts of commoning (E. McCann, 2011, p. 145; M. J. Williams, 2018). In commons, humans intentionally act upon maintaining the relations that keep the assemblage together. For example, protecting a mountain from extractivism requires actions such as protest and lobbying.

The final element, when describing how a commons is performed, concerns the power relations within it. As feminist scholars have repeatedly pointed out, the way different agents connect within an assemblage is unequal and messy (McFarlane, 2009; Nightingale, 2019; Parris & Williams, 2019; Power, 2019; M. J. Williams, 2020). This means that some agents can utilize resources, create alliances and connections with their surroundings, and extend the socio-material environment, better than others. For example, within an assemblage some people are more overburdened with care responsibilities than others (Power, 2019; M. J. Williams, 2020). Being overburdened with caring responsibilities affects how someone participates in, for example, decision-making processes and the overall political directions of a commons. For instance, being a caregiver and participating in a commons can shape the capacity of someone to participate in the maintenance of the commons.

3.3.2   The Spatial Dimension of a Commoning Assemblage

The practice of *caring with* is both socio-materially constituted and spatially assembled (Power, 2019, p. 768). Performing practices of collective care plays a role in how space is constituted (Morrow & Parker, 2020; Parris & Williams, 2019). Research has long attended to how space is (re)produced through everyday practices. From this perspective, space is performative and always in the making (Allen, 2011, 2016; Allen & Cochrane, 2007; Glass & Rose-Redwood, 2014; Jones, 2010; Knibbe & Horstman, 2019). This section seeks to explain how commoning produces space, and how this manifests in different kinds of politics.

To attend to the spatial dimension of commoning, I draw influence from philosopher Henri Lefebvre (2004) and his understanding of space as entangled with time. Lefebvre argued that space is constituted by a repetitive enactment of practices, rules, laws, rituals, and ceremonies (p. 6). I understand the idea of repetition as the performative practices of care in maintaining and reproducing a commons. In Lefebvre's description of the production of space, repetition does not produce sameness. Instead, there is always something unpredictably different that emerges in the process (Lefebvre, 2004; Glass & Rose-Redwood, 2014). To make it clear, repetitive practices of

collective care are performed in order to maintain a commons across space. Every time the process moves forward there is always something new that emerges. This could be an event, new members could enter or leave the assemblage, new institutional arrangements could occur, or some kind of authority might try to limit commoning activity. Moreover, repetition cannot produce identical feelings, movements, and power relations as if they were frozen in time. In this sense, a commons exists within a struggle where its members aim to maintain its existence through adapting to change. Therefore, imperfect repetition brings to the light the contingent, fluid, and precarious nature of a commons (Eizenberg, 2012; McFarlane, 2011a; Schierup & Ålund, 2018; Trimikliniotis et al., 2016). This understanding echoes the idea that a commons is always in the making (Gibson-Graham et al., 2016; M. J. Williams, 2020).

In commons literature, the correlation of commoning to space has been predominately approached as a relationship between different property arrangements (Bollier & Helfrich, 2019; Hardt & Negri, 2011; Ostrom, 2015; Stavrides, 2016). Property signifies a legal status of space as, for example, public, private, and open access. Gibson-Graham et al. (2016) have argued that commoning can be performed within all these different property arrangements (Dombroski et al., 2019; Gibson-Graham et al., 2013; M. J. Williams, 2018). Property arrangements are constituted upon the repetition of specific attitudes oriented towards the maintenance of a particular legal status of space. Gibson-Graham et al. (2016) have made the example of wallaby protection in Australia to show how *caring with* is performed within different spaces with diverse legal status. The assemblage they discussed takes place on privately owned land, and the agents engaged in commoning include a farming family, state government officials, private hunters, privately owned guns and cars, and many more. The example projects that commoning can occur everywhere and can potentially include anything and anyone who develops an interest in collective matters of care. The goal was to convey that it is not the legal status that defines the image of space but the practices and the aims of participants within an assemblage (M. J. Williams, 2018). For example, if economic growth is the overarching aim within a broad assemblage, all participants in the commons who depend on it will channel their energies towards sustaining this particular assemblage. To that extent, space will be shaped in a way that reflects the interactions that reproduce the assemblages. Hence, it is not only the legal status of a particular location that affects the production of space, but also the relationships and practices of those (re)producing it.

3.3.2.1   Space and Scale. Discussing how commoning is performed within spaces, while exploring the agents and agencies involved in this process, brings the question of scale into play. The concept of scale has been highly contested (Howitt, 2003). Mark Boyle (2002) has noticed, through his work with water governance in Ireland, that a focus on scale allows for an engagement

with the role of power in space. Some agents have a better ability to determine how space can be defined vis-à-vis what scale and what solutions this definition makes possible or forecloses (Boyle, 2002). Scale refers to exploring how the particular forces of different assemblages manifest their power in a specific space – for example, how the imposition of austerity policies designed in the European Union affects the local community in Skouries. Political decisions made at the international scale can affect local communities, people, and politics. They can also limit or enable the formation of particular commons. People experience such decisions, that seem to be made from 'nowhere', as 'somewhere' in place, time, on their bodies, affecting their emotional worlds and worldviews. The discussion about scale is not about an abstract concept, but about politics that affect everyday life.

In this light, commoning can be performed within all different spaces and scales. This understanding presents opportunities for challenging the dominant modes of care that are preoccupied with economic growth in all spatial arrangements. This means that commoning can challenge well-established norms, influence local, national and international politics, and destabilize identities constructed upon those power relations encouraged by the dominant forms of care. To analyze scales, one has to attend to the mundane practices through which national, local, and international policies are performed, cited, and invoked (Glass & Rose-Redwood, 2014, p. 226; Müller & Schurr, 2016, p. 35). It is possible to observe the effects of scale on bodies, materials, relations, and institutions. In other words, the outcomes of a policy ordered by state, local, or global institutions can become observable only through their practical application at a specific spatial location, including observing resistance to the implementation of a particular legislation. Therefore, there is always an element of struggle in the way space is constituted.

3.3.3 The Temporal Dimension of a Commoning Assemblage

Space is not only materially assembled, but is embedded in temporal processes (Jones & Cloke, 2008, 2002). Space is assembled through the socio-material correlations of long and slow geological time and ecological cycles in which organisms, trees, plants, animals, machines, and humans (re)produce socio-material realities (Puig de la Bellacasa, 2017). In the previous subsection, I pointed out that commons play a significant role in the formation of space. The temporal dimension of space presents new questions about the relationship between commoning and time. I foreground this dimension of space with the question: What is the role of time in a commons?

The reproduction of collective care depends on the repetition of everyday practices that aim to maintain the socio-material relations within a commons. Repetition creates a specificity of

relations through intensifying engagement and knowledge development (Puig de la Bellacasa, 2017). The element that shows whether a commons encourages *caring with* is its attentiveness to the different seasonal rhythms and to the varying temporalities of the various agents that constitute an assemblage (Puig de la Bellacasa, 2015, 2017). A commons that encourages *caring with* emphasizes the diversity of forms of time, such as cyclical, deep, and slow (Kverndokk et al., 2021).

Puig de la Bellacasa (2017) described a commons focused on how soil regenerates when an earthworm community is given time to flourish at its own pace. Earthworms play a fundamental role in decomposing elements that are vital for soil fertility (McDonald, 1994), soil biodiversity (Van Leeuwen et al., 2011), and the soil health for other species (Wardle, 2002). This is a commoning example of human participants creating the proper conditions for the earthworm community to reproduce, including technical interventions. Through this process, they support the proliferation of their soil habitat and thus make it flourish. The non-human community plays an active role in defining time, setting the pace with which human communities comply. By paying careful attention to the needs and tempo of the earthworm community, humans provide the space for a diverse variety of species to thrive over different temporal periods. Learning how to locate such examples can help us become more competent in distinguishing between assemblages that respond to different agents' needs and temporalities.

Puig de la Bellacasa (2015) argued that, in an assemblage preoccupied with economic growth, technology and care are utilized in a way that aims to impose a linear mode of time that only pays attention to and cares for the entities that produce economic value (p. 691). The idea of being attentive to the different temporalities of different agents within economic assemblages runs counter to the efficiencies sought by the assemblage. Using the soil example, Puig de la Bellacasa (2017) showed how an economic assemblage breaks existing relations in its effort to produce economic growth. She noticed that, for accelerating yield, humans inject the soil with chemical fertilizers. As a result, this slows down the earthworm community, which is fundamental to the reproduction of soil balance, making the soil flourish or, in some cases, making it lifeless. By compressing time in order to accelerate yield, the chains of relation break, reassembling in a way that orients towards intensifying the production of a specific crop while breaking other restorative connections operating at different temporalities.

Between these two different approaches to the soil assemblage, there is a qualitative difference. In the first assemblage, the human community is preoccupied with maintaining relations with the non-human in regard to soil sustainability and flourishment. In this case, humans

have understood that their community's wellbeing depends essentially on the wellbeing of the non-human. In the second assemblage, the relationships that matter the most are the ones that produce economic growth. Since economic growth is an urgent matter of progress in our societies, it needs to be produced fast and at the lowest possible cost. In that sense, humans forcefully impose a relational model upon the non-human that cannot be fully processed, and chains of relations break and reassemble in different and often destructive ways. Overall, the first approach refers to an assemblage where *caring with* is preoccupied with a concern for maintaining and reproducing the conditions that sustain the existing relationship between humans and the non-human world. In contrast, the second case shows that this assemblage, preoccupied with an urge for quick economic growth, does not provide a hospitable environment for maintaining the existing socio-environmental relations.

A temporal understanding of commoning keeps in mind Lefebvre's (2004) argument that repetition does not lead to sameness. Assemblage-thinking in a temporal frame encourages us to think about the contingency and unpredictability that occurs because of the mutations, unexpected encounters, and resistances experienced when practicing care. Unexpected encounters can disrupt the efficient functionings of an assemblage. For example, by using industrial fertilizers, the balance within an assemblage can change, attracting new species resilient to chemicals and hostile to other soil communities. In a few years, the field might be devastated, unable to produce yield, which can lead to abandonment and the desertification of a place for a significant period of time. Furthermore, an earthquake, a flood, the price of a crop in the global market, or a pandemic, could accelerate the abandonment of industrial crop production. The same can also occur in a more caring commons, where unpredictable encounters can reproduce, enhance, or dismantle the existence of a community (Chatterton, 2010, p. 626). That is precisely why presenting commoning as an ongoing and performative process means being open to the contingent, messy, and unpredictable character of its politics (Gibson-Graham et al., 2016, p. 208; McFarlane, 2011b, p. 661; M. J. Williams, 2020). This unpredictability also points to the fact that *caring with* is a process that takes time and depends on the commitment of the community to exploring new strategic relations and possibilities that will support and enrich the goals of the commons in the future.

Conclusion

For analytical and methodological reasons, I describe three dimensions of commoning assemblages, the socio-material, spatial, and temporal, separately. However, it would be wrong to

assume that each of these three dimensions can be located independently from the other two. Instead of speaking about space and time as two separate dimensions, it would be more appropriate to talk about performing spatio-temporal arrangements across space and time. These spatio-temporal arrangements become observable through their associations with vibrant matter. In this sense, space and time appear through the manners in which different agents are assembled together and cared for in particular locations.

The socio-material dimension raises the question about which agents are part of a commoning assemblage. The other two dimensions explore how the relations between the different agents of a commoning assemblage are affected by, and affect, time and space. Repetition and differentiation are the two common characteristics in both spatial and temporal dimensions of commoning. These two characteristics point to the fact that commoning is "always becoming" (Chatterton, 2016). This means that the maintenance of socio-material relations in a commons requires a constant openness and adaptation to the unpredictable changes when maintaining socio-material relationships. Under this light, socio-material relations always include the possibility of disassembling, mutating, or transforming in unexpected ways. To give an example, maintaining an apple tree requires specific caring practices during different periods of the year. This will allow the tree to flourish in a particular season. Yet, there can be unpredictable weather conditions or soil erosion, which can lead to the inability of the tree to thrive despite all the care the tree receives. Below, I present the image (Figure 3.2) of a relational commons that it is constituted upon commoning practices of collective care.

Figure 3.2

The Three Dimensions of a Commoning Assemblage

Socio-material relations

• Who participates?
• How is it performed ?

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Space

• How is space constituted through practices of collective care?
• Scale: How does power vested in different agents affect the image of a particular space?

Time

• How attentive are the agents within an assemblage to the different temporal rhythms of each other?
• An assemblage is maintained in time through repetition and differentiation.

Source: Author. Photo taken from Microsoft Word templates

In this chapter, I explain the difference between various commoning assemblages. I point out that, in a commons that encourages *caring with,* humans and the non-human are co-constructors of their worlds. Such an assemblage includes different human and non-human agents, institutions, effects, and technologies. Moreover, I also note that space is materially assembled and socially performed and requires an attentive stance towards the different temporal needs of the various agents that constitute it. Therefore, it often takes considerable time for someone to observe the positive outcomes of commoning (Gibson-Graham et al., 2016). The so-called relational understanding of commoning opens great political potentials for positive change in the Anthropocene. In the next chapter, I present the methodology used in exploring *caring with* in Skouries.

Chapter 4:
A Commons Methodology

In this methodology chapter, I aim to provide a clear picture and detailed description of the methods I applied during my fieldwork, and the strategy I utilized to translate the generated data informing the research questions. The methodology is designed to be flexible, following a participation format which allowed my study participants to feel more comfortable, rather than enforcing my own methodological design upon them. By following this pattern, I aim to ensure that I meet my ethical commitments, while also securing my institutional obligations in terms of my thesis and the Human Research Ethics demands. Throughout the thesis, and as I explain further later in this chapter, I have tried to be attentive to the data without denying the subjective input I invested when analyzing and interpreting the fieldwork information. By providing a clear image of the methodology and methods alongside my positionality, I aim to give the reader a better understanding of the possibilities and limitations of the research process that inform the presentation of the data in the empirical chapters.

My project adopts a case-study approach focusing upon the area around Skouries minefield in Halkidiki, Greece. The case study provides a fertile ground for developing a rich understanding of commoning assemblages involving humans and non-human entities and their relevance to the Anthropocene epoch. My approach is informed by recent work on new materialism and the affective politics of commoning and collective care (Gibson-Graham, 2008; Gibson-Graham et al., 2013, 2016; Papadopoulos, 2012; Puig de la Bellacasa, 2015, 2017; M. J. Williams, 2018). The qualitative methodology allows for an attentive stance towards the multiple ways in which commoning occurs in constructing spaces, socio-material relations, and political narratives (Gerring, 2007). I also describe the mixed methods used to collect and analyze my data. These methods include primary data collection, including semi-structured interviews, field observations, focus groups, participant observations, and secondary data collected through document and media analysis.

4.1   Analyzing Assemblages through a Case-Study Approach to Methodology

The research adopts a qualitative methodology in identifying and analyzing different commoning practices around Skouries. In order to explore different forms of commoning informed by new materialism, I turn to assemblage theory as a means of engaging with both human and non-human agency (Deleuze & Guattari, 2007). My interest in this approach has been inspired by geographers, anthropologists, and social scientists who have been experimenting with new materialism and assemblages as a methodological and analytical framework for engaging with the different sides of agency (J. Allen & Cochrane, 2007; Bennett, 2010; Connolly, 2013; E. McCann & Ward, 2012; Prince, 2010; Whatmore, 2002, 2006; Wood, 2016).

The choice of assemblage theory is based on the idea that complex social phenomena are better explained when understood as entanglements between humans and the non-human (Puig de la Bellacasa, 2017). This approach provides a helpful way to understand how social structures are constructed by different agents, humans or non-human, in predicted or unexpected ways (McFarlane, 2011a). Assemblage theory assists research in two ways. First, it reveals a world of relations that are often ignored in the eyes of the human-centered analysis (Feely, 2020, p. 17). It is this focus on the importance of non-human agency that opens up a whole new world of possibilities for politics in the Anthropocene. It does this by pointing out that the different agents, human and non-human, are positioned as equally important in shaping liveable social realities (Deleuze & Guattari, 1987). Second, it pays attention to the dynamism of the relationships between different agents. This signifies that building relations between different agents can be either symbiotic or antagonistic in different settings (Haraway, 2016; Tsing, 2015). Pointing to the dynamism of agency reveals a terrain of unequal relations and helps to question how to challenge this power imbalance.

A case-study research approach towards commoning influenced by new materialism helps me show the dynamic, agentic, interactive, and dialectical relationship between humans and non-human agents around Skouries (Feely, 2020). This approach to methodology provides insights into complex, materially heterogeneous, and contingent assemblages of constantly performing human and non-human agents (McFarlane, 2009, p. 3). As geographer Colin McFarlane (2011a) argued, focusing on case studies of assemblages provides a way to "see political economies and emerging structures   as   relational   products   assembled   through   multiple   routes,   actors,   histories,

contingencies, resources, socio-materialities, and power relations" (p. 379). Under this light, examining a variety of different commoning assemblages provides a deep understanding of how various human and non-human agencies comprise such assemblages.

A case-study methodology provides a situated engagement with the case-study participants and relations within a research project. It is a way of doing research where the central focus is given to the primary collection of data, which drives theory development (Pole & Hillyard, 2016, p. 3). Case-study research encourages exploration of lived experiences in an intense and rich way through the interaction of the researcher and the participants of the research (Gerring, 2004). The researcher can observe what people do and say over a prolonged period (Hay, 2016; Herbert, 2000, p. 557). What then emerges is a grounded understanding of people's everyday living experiences, daily struggles, emotional tensions, and power relations, as they relate to different commoning assemblages.

The case-study approach is ideal for challenging, developing new, or enriching existing theoretical concepts (Baxter, 2015, p. 135). It provides a detailed analysis of why theoretical concepts may or may not fit a particular case. In practice, it can help to influence the already-existing theories of commoning that I have used to approach my empirical data. Case-study research assumes that an in-depth understanding of one manifestation of a phenomenon (commoning) in a particular spatial location is valuable on its own merits without specific regard to how the phenomenon manifests in other case studies. As data flows from the emersion of the field, the case study does not necessarily aim to make generalizations and broad assumptions about the behaviour of groups of agents (Pole & Hillyard, 2016, p. 3). Yet, some basic observations can enrich our understanding of commoning across different contexts (Gerring, 2004, 2007). As Flyvbjerg (2006) argued, a single case study can play a significant role in advancing scientific knowledge through generalizations that emerge from the field. In that sense, the case study can contribute by adding one more piece to a broad puzzle of unique commoning cases across the globe. So, in my case, thinking from Skouries enables me to reflect on how commoning emerges in response to Anthropocene-related problems.

To achieve these goals, I have used a range of different methods of data collection, including: participant observations, focus groups, semi-structured interviews, and document and media analysis (Flowerdew & Martin, 2005; Hay, 2016; Pole & Hillyard, 2016, p. 13). Unlike research that is mainly based on questionnaires or surveys, the methods mentioned above are heavily dependent on the attentive contact between researcher and participants. The interpersonal contact I have had with my case-study participants has made it very difficult to have a fixed and

predetermined set of theories and theorizing. Thus, the study methodology has been much more unpredictable than first anticipated. However, this has opened up the possibility of building my analysis from the grounded materials I have collected (Pole & Hillyard, 2016, p. 13). In other words, my case-study methodology provides an open space for contributing to and enriching already-existing scientific approaches by allowing the grounded material to inform the thesis design, because this provides a certain amount of flexibility in the manner of exploring a specific phenomenon (Baxter, 2015).

I have tried, as a case-study researcher, not to seek to influence the situations or the behaviours of the study participants. By doing this, I have allowed the participants to express their feelings, concerns, and views, which constitute the realities they experience and perform. In case-study methodology, it is generally accepted that there are multiple understandings of what constitutes reality (Haraway, 1991). Under this light, the case study has helped me capture the significance and meaning of a situation, a set of events, and the relations between the different agencies that participate in the research (Pole & Hillyard, 2016, p. 14). In this regard, the purpose of using this methodological approach is to analyze the relations that contribute to commoning assemblages. In the following section, I explain the case-study context and approach in more detail.

4.2 Case-Study Context and Data-Collection Methods

In the following subsection, I provide the geographical context that informs my research methodology and data-collection methods. I close the context discussion with a presentation of how my approach is unique for the Skouries context and what new it offers to Anthropocene debates.

4.2.1 Case-Study Context

The Anthropocene-related problem that my thesis focuses upon is that of large-scale valuable metal extractivism. Extractivism is responsible for Anthropocene-related problems such as biodiversity loss, deforestation, water and soil depletion, as well as the intensification of social injustice (Acosta, 2013; Görg et al., 2020; Lövbrand et al., 2020; Lyra, 2019; Schneider, 2018; Vindal Ødegaard & Rivera Andía, 2019; Watts, 2019; Willow, 2016; Ye et al., 2020; Zibechi, 2012, 2014). Social movements have a long history of resistance against large-scale extractivist projects and the ensuing degradation of the living conditions of large portions of the population. From Standing Rock in the US (Kidd, 2020), Papua New Guinea and Australia (M. Allen, 2019;

Burgmann, 2003; Filer et al., 2017; Merlan, 2005), to the Zapatista Movement in Chiapas, Mexico, and the Cochabamba Water Wars in Bolivia (Callahan, 2005; Khasnabish, 2010; Oikonomakis, 2019a, 2019b), social movements have contested the power vested in elected representatives with sovereign authority, and in oligopolies of power preoccupied with the accumulation of economic growth (Kallis, 2017; Kioupkiolis, 2019, p. 218; Kioupkiolis & Katsambekis, 2016).

These movements bring into light new forms of collective participation, setting out their agenda for politics that can provide valuable insights on how to deal with problems mainstream politics fail to deal with (Hardt & Negri, 2012; Klein & Stefoff, 2021; Prentoulis & Thomassen, 2013). In such cases, commoning practices have been utilized as a response to the failure of political authorities to materialize environmental goals, such as reducing carbon dioxide in the atmosphere, into actual policies (Chatterton, 2016; Chatterton et al., 2013; Clémençon, 2016; Rogelj et al., 2017). Since 2008, in many countries, the global economic crisis has allowed for an acceleration of the capacity for phenomena to push up against the protection of environmental laws and international agreements (Botetzagias et al., 2018; Clifton et al., 2018; Klein, 2014; Lekakis & Kousis, 2013). Commoning and social-movement mobilizations have responded to these multiple crises and have helped address the gap that emerged after the retraction of environmental protective laws (Arampatzi, 2018, 2020).

During the period of the economic crisis in Greece in 2010, commoning practices became a way for many people to survive poverty, and to gain access to healthcare and psychological support (Kallis, 2017). The economic crisis led the country to lose 15.4% of its GDP within only a few years and the country's public debt to skyrocket (Amadeo, 2019). Due to austerity measures imposed on the country as a result of its public debt and the intensification of police violence, 2010 was marked by a social uprising that evolved into an anti-austerity movement. Within a context of fear and crisis cultivated by many politicians and media (Douzinas, 2013), a new commoning movement was born (Castells, 2017). The movement was mainly organized through social media, with no clear organizational structure defining the place, time, or form of protest (Douzinas, 2013; Hadjimichalis & Hudson, 2014). The first mass gathering took place in Syntagma Square, the central square right below the Greek parliament in Athens. It was in response to a post on social media where the Spanish *Indignados* asked, "*Why are the Greeks asleep?*" The answer from the Greeks came spontaneously – "*We are awake!*" (Aslanidis & Marantzidis, 2016). The square was occupied by a vibrant community and functioned as a meeting point for political conversations and direct-democratic experimentations in decision-making (Kallis, 2017; Kioupkiolis, 2019). Later on, the occupied-square gatherings evolved into decentralized neighbourhood assemblies organized independently (Castells, 2017, p. 136). All of these transformations of commoning

harboured the need of people to express an alternative vision for politics that would challenge the neoliberal doctrine and economic austerity (Castells, 2017; Kaika & Karaliotas, 2016; Klein, 2014).

Within this highly intense social climate, commoning practices started spreading all across Greece. People began participating in different projects, such as social clinics; self-organized kindergartens; initiatives against water privatization; food, agricultural, newspaper, and workers' cooperatives; urban gardens, and time banks (Varvarousis & Kallis, 2017). While commoning practices were spreading all across the country, one particular case made an impression on me: the anti-mining struggle in Skouries on the Halkidiki Peninsula, Northern Greece, in 2011.

Aristotle Municipality has a long history of small-scale extractivism in the various villages that constitute the municipality, having long attracted the interests of many gold-mining companies. Greek governments, social democrats and conservatives respectively, have paved the way for creating a dependency of a large section of the local population upon mining. Despite the political will of Greek governments to promote mining in Skouries, the full extractive potential of gold, ore, and copper reserves was not realized due to limitations in technology. Drilling to a depth of 350 meters to find gold has been almost impossible in the past (The Mackenzie Institute, 1998). In the 1990s, miners had to carry their technological equipment on their backs, walking on all fours to access the mine galleries (Souli, 2018). These people were digging or using tractors provided by the company to extract gold from the earth; however, this yielded far less than could be extracted with modern equipment. This failure to extract significant amounts of valuable metals destabilized the profitability of mining, and many mining companies in the area could not fulfill their environmental and health commitments to the Greek State. In 2002, a chemical leak into the Aegean Sea, off Stratoni, put a permanent halt to small-scale mining around Skouries (Kadoglou, 2002; SoSHalkidiki, 2013a, p. 8). These two reasons – the technological inefficiency and the mining companies' inabilities to comply with the Greek environmental laws – led many of the previous mining companies, like TVX Gold, Inc., and European Goldfields Ltd., to declare bankruptcy. The following Figure 4.1 shows the mining areas in Aristotle Municipality.

Figure 4.1

Map of Mining Fields in Aristotle Municipality, Including the Disputable Area of Skouries

Image has been removed as it contains copyright material.

Source: https://antigoldgreece.wordpress.com/2012/03/31/anti-gold-protests-escalate-into-violence-and-hostage-situation/
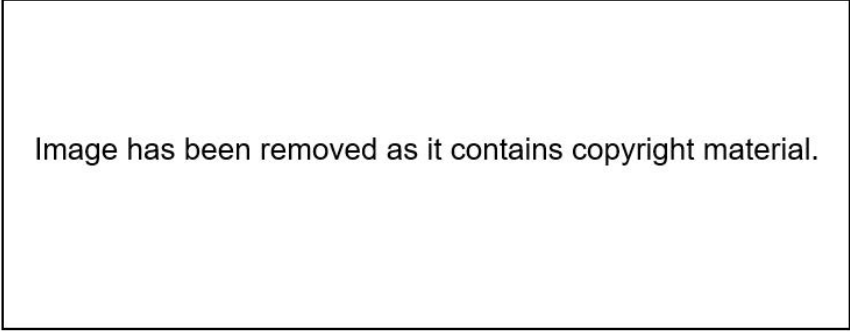
Bankruptcy had two significant results. Firstly, the miners were abandoned to claim economic support from the Greek State (Kadoglou, M. [@antigoldgreece], 2003). When a mining company bankrupts, the miners have no source of income. Without State support, 472 workers from Aristotle Municipality and their families would be unemployed, and the local economy would be severely affected (Kouti Pandoras, 2017). The local economy is dependent on mining and private mining companies. In that sense, it seemed rational for the state officials to look for another investor to take over the existing mines.

Secondly, despite the negative effects of small-scale mining, including water poisoning, cancer, and landslides, mining contributed to the sustainability of the local economy and activities. Miners developed the ability to circulate the local economy through their consumption patterns. More specifically, small-scale gold extraction led to decent miners' wages, which sustained regular consumption patterns within the local community of fishermen, farmers, and beekeepers. The different economic sectors supported one another despite competing interests. Importantly, non-mining economies, such as fishing, beekeeping and farming, could work alongside small-scale mining. Specifically, northeast Halkidiki has 814 beekeepers, 108,900 square metres of farmland, and 276,000 square metres of grazing lands (SoSHalkidiki, 2013a, p. 10). In light of this, small-scale mining was tolerable for a large share of the municipality's

population, whose economic and social activities could co-exist with the scale of mining and environmental degradation (Hadjimichalis, 2014, p. 504).

The formation and mass mobilization of a large anti-mining community around Skouries was in response to an upscaling of mining activity, itself a result of the economic crisis in Greece (Calvário et al., 2017; Fotaki & Daskalaki, 2020; Hatzisavvidou, 2017; Tsavdaroglou et al., 2017). The economic prospects for the indebted Greek economy justified the change in scale of the mining investment. Unlike other Greek municipalities that depend heavily on tourism, Aristotle Municipality depends on mining, which has made it vulnerable to the continuation of mining projects despite the social and environmental cost (Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019; Liaggou, 2019; Velegrakis, 2013, 2015). The large-scale mining project in Skouries Forest was approved in 2011. It involved open-pit mining and on-site ore processing in Skouries, a location close to surrounding Natura 2000 sites, the European Union's network of nature protection areas. Canadian company Eldorado Gold and its Greek subsidiary Hellas Gold took over the project, and miners saw the new project as an opportunity for the whole area. However, residents employed in agriculture, fishing, forestry, and tourism interpreted it as a significant threat (Hovardas, 2020). Figure 4.2 is a calendar that shows the dates of the shifting of mining companies and the beginning of resistance to large-scale mining.

Figure 4.2

Calendar of Mining Transition from Old to New Companies, and when Resistance to Large-Scale Mining Started
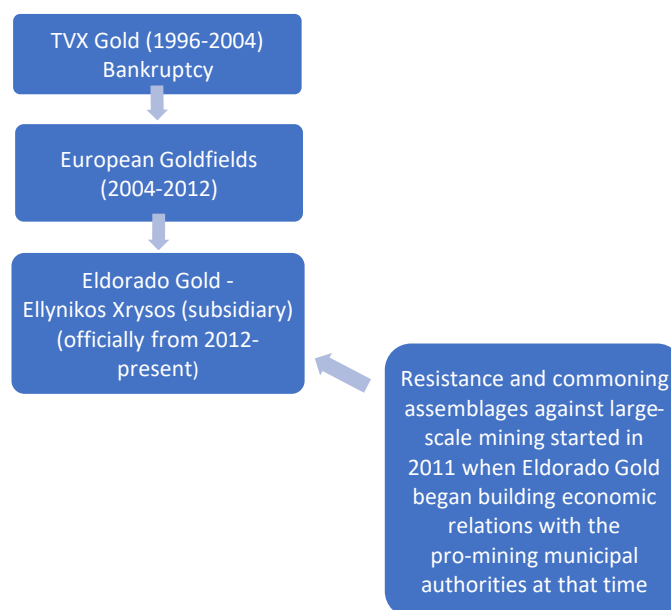
Source: Author

Note: For more details on the timeline, see Figure 8.1

The conflict between the anti-mining community and the pro-mining local and national authorities scaled up in 2013, marking the confrontation agenda between SYRIZA (*Sinaspismós Rizospastikís Aristerás – Proodeftikí Simachía* [Coalition of the Radical Left – Progressive Alliance]), the political left-wing party that favoured the anti-mining movement, and New Democracy, the conservative and leading governmental party at that time, which endorsed the new mining project. To give a better understanding of the context and the basic positions of the two opposing camps (pro- and anti-mining), I present Table 4.1, below, with the data collected from Hovardas (2020):

Table 4:1

Basic Narratives of Pro- and Anti-Mining Camps

Strategies	Pro-mining	Anti-mining
Institutional:	The mining project proceeds according to the licensed Environmental Impact Assessment (EIA) study carried out in 2018. The assessment has been delivered by the company, and it is a state-of-the-art and scientifically solid study. The legality and lawfulness of mining developments have been verified by numerous decisions of the Council of State. Political parties in favour of large-scale mining in Skouries: New Democracy, Panhellenic Socialist Movement (PASOK), Golden Dawn (far-right ultranationalist party)	Violation of environmental regulations and EIA terms have repeatedly been identified by competent authorities and verified after multiple inspections (Hovardas, 2020; SoSHalkidiki, 2013a). The decisions of the Council of State are questionable on a legal basis, inconsistent with national and European environmental legislation and case-law, reflecting favouritism towards the mining company. Political parties against large-scale mining in Skouries: SYRIZA
Grassroots:	Local people who oppose the mining project are presented as having been deliberately misinformed about its supposed adverse consequences. Miners argue that they will control the mining company if they realize any deviation from environmental regulations and rules, since they and their families would be the first to suffer from any adverse consequence. Miners escalate their responses whenever the mining project seems to be threatened, by undertaking demonstrations and marches. They may even choose to take over the mining tunnels to defend their jobs. Miners have always organized through their unions to stand up for their labour rights, and they are committed to protecting their jobs at any cost, at any time.	Several academics and academic institutions have backed the arguments of the local anti-mining movement. Activists march to the forest to monitor environmental change and gather data to examine if the company is complying with environmental standards. Activists escalate their activities, through a scheduled set of initiatives involving demonstrations, events, and concerts, to sustain a network of regional, national, and international supporting actors. Activists acknowledge that they will need to depend on their strengths and competencies, collaboration, and decision-making to pursue their goals.
Latent:	The mining company may choose to suspend its operation or withdraw from the area, depending upon the price of gold and pending mining permits.	Several local activists are considering evacuating the area if the new mining project is eventually realized.

Source: (Hovardas, 2020, p. 114).

The Skouries case study adds one more piece to a broad global puzzle of social struggles against the Anthropocene-related problem of extractivism (Lövbrand et al., 2020; Willow, 2016). It is a struggle with unique characteristics; however, it is also a struggle with a global character, because it refers to the particular problem of extractivism, which contributes to more than 50% of global carbon emissions (Watts, 2019). While this is a popular case study amongst Greek social-movement researchers and activist journalists (Calvário et al., 2017; Meynen & Poulimeni, 2016; Souli, 2018; Tsavdaroglou et al., 2017; Velegrakis, 2015), it has never been approached from a new-materialist perspective. In that regard, previous suggestions and observations have been anthropocentric and approached primarily through a Marxist/post-Marxist ontology.

The earlier studies focused on the impacts of large-scale mining on the local society, health, and economy around Skouries (Meynen, 2019; Meynen & Poulimeni, 2016; SoSHalkidiki, 2013a). With the rise of the anti-mining movement in Skouries, people started focusing on the significance of societal resistance to mining and the benefits of terminating the mining operation in Skouries (Calvário et al., 2017; Kallis, 2017; Klein, 2014; Tsavdaroglou et al., 2017). Others focused on the narratives upon which the pro- and the anti-mining sides had based their struggle (Hovardas, 2020; Velegrakis, 2015). Fotaki and Daskalaki (2020) focused on how the women of the anti-mining struggle challenged established societal norms and identities in the local community. People from the local community contributed their own voice in a chapter (Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019) in the book with the title *The Right to Nature*, written by Apostolopoulou and Cortes-Vazquez (2018). My research on this case study aims to enrich current literature with the inclusion of the non-human element by examining commoning assemblages, as well as with the complexity and messiness of those relations that challenge a tendency to idolize the overall outcome of societal resistance to mining. In the next section, I give an overview of the site selection and the groups of people who participated in my research study.

4.2.1.1   Site Selection.   The case-study villages are located on the northeastern edge of the third leg of the Halkidiki Peninsula as part of Aristotle Municipality. I situate my research within two specific villages around the Skouries gold mine: Megali Panagia and Ierissos. Each village's population relates to mining differently. Megali Panagia has a population that depends both on mining and activities like farming, logging, and beekeeping. The second village, Ierissos, depends on agriculture, tourism, beekeeping, and fishing. The villages host a range of commoning assemblages that contest or have responded to large-scale mining in diverse ways. In addition, the two villages formed the Committees of Struggle, collective decision-making organisms that helped to bring different people from different anti-mining communities together. Both communities are located close to Kakavos Mountain and Skouries minefield and both were focal points for anti-

mining struggles. Other areas, such as Arnaia, Stavros, Stratoniki and Thessaloniki – the second largest city in Greece – were supportive but less directly engaged in the anti-mining struggle. Some of these different villages also formed Committees of Struggle, supporting their counterparts in Ierissos and Megali Panagia. Figure 4.3, below, shows the mining field, the local communities, and some of the Struggle Committees that formed to protest mining.

Figure 4.3

Mining Property, Environmentally Protected Areas, and Struggle Committees

Image has been removed as it contains copyright material.

Source: Tsavdaroglou et al. (2017)

The village of Megali Panagia is located at the foothills of the mountain of Kakavos, where the mining pit is placed. It has a local population of around 2,780 people (Hellenic Statistical Authority, 2021). Megali Panagia community is divided. Many people work in the mines or have relationships with people who work in the mines, whilst others are badly affected by the mining proposal. The people from the village who oppose the expansion of mining do so because they are afraid of the devastating impacts on their environment, local economy, and community livelihoods (SoSHalkidiki, 2013b). These anti-mining proponents developed commoning practices in response to the expanding mining operation. Megali Panagia is also interesting, as it is related to a broader network of social movements and struggles against extractivist processes all over Greece. This grassroots-oriented anti-mining community has a radically Left core. However, the

political orientation of Megali Panagia's anti-mining group plays a restrictive role in community mobilization and the broad anti-mining struggle around Skouries, because of their smaller base of support within the municipality and because of the labour divisions within the community itself.

The other village, Ierissos, is a coastal village on the third leg of the Halkidiki Peninsula, with a population of approximately 3,460 people (Hellenic Statistical Authority, 2021). The village is within 50 kilometers' proximity of the mines and, unlike Megali Panagia, Ierissos depends predominantly on tourism, farming, and fishing. Moreover, Ierissos has a port, which is the passage to the Holy Mount Athos, one of the major landmarks of the Christian Orthodox Church. Before 2011, Ierissos was not involved in commoning, but the town became involved in the anti-mining struggle after becoming aware of the scale of damage the mining expansion could produce. The continuous efforts of the people of Megali Panagia, alongside researchers from the Aristotle University of Thessaloniki, helped Ierissos anti-mining groups to form and to actively engage with local forms of resistance (Interview GI, May 16, 2019; Aristotle University of Thessaloniki, 2012; Benos, 2012; SoSHalkidiki, 2013a). Their relative independence from mining helped a diverse population of conservatives, social democrats, and leftists unite against large-scale mining. Ierissos managed to communicate the struggle against the expansion of mining to an audience beyond the municipality's borders. Consequently, Ierissos became an important centre for the anti-mining struggle, influencing the strategic decisions of other smaller municipal villages like Nea Roda and Ouranoupoli.

4.3   Research Methods and Analysis

In this section, I explain my research approach and how this aligns with the case-study methodological approach I have adopted to study commoning assemblages in Skouries, including the recruitment process and data collection methods.

4.3.1   Research Approach

I have adopted a mixed-methods research approach (Pace, 2016; Scheyvens, 2014). This approach allows a range of different insights to emerge from the field (Staveteig et al., 2017). It has also enabled me to be flexible and attentive to any requirements my study participants might have had, since it allowed me to follow and adapt to their needs and schedules (Archibald et al., 2015). The ability to draw on a diverse collection of methods, resource types, and perspectives in my research design is recognized as a valuable element when exploring and narrating complex phenomena that require sensitivity to contextual specificities. Adding to that, throughout the

research analysis, new questions can arise and generate new insights while opening new paths for further exploration. Richardson and St. Pierre (2008) have promoted the idea of "crystallization" of data to reflect that multiple sources and methods can help re-evaluate that data in new and valuable ways. The mixed-methods approach has proven especially helpful in this research, allowing for a combination of different techniques that enable interviewees to share their views and understandings in diverse and, many times, unpredictable ways.

I also found mixed-methods appropriate because it helped in understanding how my human participants approach the issue of non-human agency from different angles. The combination of multiple-data-collection methods enabled me to draw on a variety of interpretive registers to develop a rich and nuanced understanding of more-than-human commoning assemblages around Skouries.

4.3.2 Data Collection

In this section, I first explain the process of participant recruitment and then the data-collection methods that I utilized to collect my material and to locate the topics that allowed me to better understand the role of commoning assemblages around Skouries.

4.3.2.1   Recruitment of Participants and Demographics.   Data was collected in four phases of fieldwork engagement. In Phase 1, I came in contact with participants through Facebook (www.facebook.com) and Skype (www.skype.com). Once I had developed associations with the anti-mining group, I undertook a two-week pre-field visit in the study area, in March 2019. During this time, I identified possible participants and familiarized myself with the research area. With the Second Phase, the main field visit began two months later in May 2019, where I collected the majority of data from the field. I stayed in the field for four months before returning to Copenhagen University. During my stay in Denmark, I managed to transcribe a large amount of my data. I made a final visit in December 2019 to get an update on the field and to confirm and re-evaluate information received from my two previous visits. Finally, I was planning to have a last visit in March 2020, but the Covid-19 pandemic outbreak cancelled my plans. Luckily, I had managed to collect a great deal of data, since I worked intensively during Phases 2 and 3. Overall, I spent five months in the Ierissos area.

Project participants were recruited through written or oral invitation in line with my approved ethics application. Once I was familiarized with people from the local community, it became clear that most people would feel uncomfortable signing a document and preferred to provide oral consent. The first contact occurred through an exchange of emails with people from

the Ierissos Anti-Mining Committee of Struggle, a publicly accessible Facebook page. The members I approached were responsible for the communication strategy of the campaign in Ierissos village. The members I contacted through email conveyed my interest in visiting Skouries to the rest of the Anti-Mining Committee in Ierissos. A few weeks later, and after having received their consent, I arranged my trip to Greece from Denmark.

At first it was challenging to find participants to involve in the process of my research, which led me to increased levels of stress and embarrassment (Thomas et al., 2007, p. 435). To start the process of participant recruitment, I used social media to reach out to my first participants in the case-study area. More specifically, I utilized Facebook and Skype for the purpose of finding email addresses (Facebook) and conducted the first two interviews (Skype) of my case study. The utilization of social media has been influenced by Mark Graham's (2012) encouragement that "geographers should take the lead in employing alternate, nuanced and spatially grounded ways of envisioning the myriad ways in which the internet mediates social, economic and political experiences" (p. 177).

Over time, I came in contact with potential participants through face-to-face interactions with people in Ierissos. This became my primary method of recruitment. The process came about through knocking on doors (Freeman, 2000), or by spontaneously talking to people on the streets (McCormack et al., 2013) in a friendly manner. The decision about which doors to knock upon was based on suggestions from interviewed informants. More specifically, I used the strategy of snowball sampling (Bryman, 2012), which involved already-interviewed participants who introduced me to other people and helped me to increase the overall number of interviews.

To familiarize myself with the participants and the location, I tried to develop relationships of trust with members of the different anti-mining groups. There were two in Ierissos and the one in Megali Panagia. For example, I tried to provide information about my study to the anti-mining community to generate interest in my project. In the first period of the recruitment, I provided some members with an orientation about my project and offered a question-and-answer period (Given, 2008, p. 3). This allowed me to create a network of contacts, and it smoothened the recruitment process through an information-sharing process and face-to-face interactions (Sixsmith et al., 2003).

I conducted 40 face-to-face interviews with people from most of the villages in Aristotle Municipality. My first contact was with members of the Committee of Struggle in Ierissos. They then provided me with the names of some potential participants. Afterwards, I contacted these

people and I started building my network of connections. Participants were from Megali Panagia, Ierissos, Nea Roda, Stratoniki, Stratoni, and Arnaia. The reason for interviewing such a diverse group of participants was because people from each different village had participated in one way or another in the anti-mining struggle. All face-to-face interviews took place in Ierissos and Megali Panagia villages. Interviewees had a diverse social background and were occupied in various activities, from schoolteachers, to managers, employees, activists, and university scholars. In the next part, I explain the three primary and two complementary methods of approaching my study's recruited participants.

4.3.3   Data Collection Methods

(i)   Semi-Structured Face-to-Face Interviews

Although I had a general plan when I first reached my field site, I also allowed my study participants to inform the basic data-collection tools, so that my tools have been inspired and shaped by the needs of my research participants. For example, semi-structured interviews were used as a method extensively in Ierissos, due to the personal stance of the study participants. Most people in Ierissos wanted to be interviewed individually, except for the focus group from the women's collective, who participated both as a group and individually. Participants in Megali Panagia acted as a group and were approached as such for the purpose of the study. In total, I conducted 40 semi-structured face-to-face interviews. The face-to-face interviews explored individuals' understanding about the specific events, their relation to the natural environment, non-human agency, and commoning around Skouries. The character of the interviews followed a semi-structured style where the questions were open and general, to allow people to remember and reflect upon the events that had taken place in the period between 2011 and 2019 (see Appendix II for interview sheet). My goal with this strategy was to let interviewees unpack their stories and viewpoints concerning commoning, while also helping them to structure their perspectives (Kvale & Brinkmann, 2015, p. 83).

All interviewees participated voluntarily and were guaranteed anonymity (see Appendix III for participant information). Two-thirds of interviewees were females. The reasons for that are the role they played in the anti-mining movement and their willingness to share their experiences with me. Interviewee ages ranged from 19 to 72 years. The general face-to-face questions were based on eight general themes:

1. Can you give some information about the context of the anti-mining struggle (how did it start)?
2. Can you remember and discuss some collective activities related to the struggle?
3. What is your relationship to the environment around Skouries?
4. Can you reflect on the possibilities and limitations of resistance to mining practices?
5. How did the miners respond to the anti-mining struggle?
6. What was the role of state authorities towards the anti-mining struggle?
7. How do you see the future of the struggle?
8. Other information that you consider important to mention?

Interviews lasted around 45 to 60 minutes and were recorded with the written or oral consent of the interviewees (see Appendix I for consent form). Interviewees were encouraged to expand upon any issue they wished. New questions were also formulated by different interviewees on emerging topics. In addition to face-to-face interviews, two of my participants gave me a tour of the area located at the foothills of Kakavos Mountain, below the mines. During this tour, I conducted field observations, experiencing first-hand some of the changes the establishment of the new mining plant and construction facilities have created in the physical environment around Skouries.

(ii) Focus Groups

The method of focus groups was used to approach participants who wished to be interviewed as a group and not only as individuals. The focus group as a data-collection method allowed me to better understand the dynamics, various perspectives, experiences, power relations, and the overall relationships between participants in commoning assemblages (Law, 2004). This data-collection method helped me to understand the "dynamism and energy" (Cameron, 2005) of the group in examination. The dynamism is an outcome of the diverse experiences of the anti-mining struggle amongst participants and of agreement on the topics of discussion. Overall, the focus-group method provided a new angle to the project, since it allowed me to learn and evaluate the history of the participants' relationships, their progress, and the common struggles they had experienced throughout the years of the anti-mining struggle.

Focus-group interviews have a long and multi-disciplinary tradition (Pole & Hillyard, 2016, p. 80). Since 1980, this research tool has made a significant contribution to data collection in social science (Barbour & Flick, 2018). Focus groups generally consist of six to ten subjects discussed by a group that is facilitated by the researcher (Chrzanowska, 2002). In total, I conducted five focus-group sessions over the different periods. The first focus-group session took place in March 2019, then May-June 2019, and finally December 2019. All focus-group interviews were with one specific group of women. The group constituted the commoning assemblage I named 'the women's collective' in Ierissos. This commoning assemblage provided my study with exceptional insights into the importance of the role of the women in the anti-mining struggle. I came to realize the significance of this commoning group through most other study participants suggesting that I interview them, since they recognized the women's contribution against mining. The women's collective had a hybrid form. Two members were permanent participants while others participated occasionally. Overall, the number of participants never exceeded six persons. I limited my focus groups to five participants in order to keep a balance of voices and for the economy of interview time.

In addition to the focus-group method of data collection, four follow-up interviews have taken place to fill in the gap caused by the unequal power dynamics between different members in the focus groups (Andersgaard et al., 2009; McGregor, 2004; Staveteig et al., 2017). The goal of this strategy was to give focus-group participants an additional opportunity to discuss their experiences and opinions outside the group setting. While I did not experience significant power inequalities while conducting the focus groups, the follow-up helped to confirm and add to my understandings about the relations between the members of the focus group. The questions that guided the focus-group interviews and the follow-up interviews were the same as I used for my face-to-face interviews.

Both face-to-face interviews and focus-group discussions contribute significantly to geographical research, especially in terms of emotions, effect, politics, power, performativity, and representation (Clifford et al., 2010). The semi-structured interviews and focus groups helped me investigate complex phenomena, opinions, and effects while collecting diverse experiences from commoning throughout the years. The plurality of different methods helped me to expose different angles of commoning, to approve or disprove things that people mentioned to me, as well as to understand the legacies of commoning by listening to both the descriptions and the depictions of commoning given by different individuals and groups of people around Skouries. I am aware that no method offers a route to unraveling all aspects of how different assemblages between humans and the non-human are formed. However, what they offer is the ability to partially understand and

explain what people do and think in relation to those assemblages by concentrating discussion on particular aspects (Clifford et al., 2010, p. 152).

(iii) Participant Observation

Participant observation has been characterized as the foundation of ethnographic and case-study research (Laurier, 2016). I adopted a participant-observation approach by sitting in on meetings with the anti-mining group in Megali Panagia. One of my study participants who had access to the group invited me to one of the group's meetings and then introduced me to its members. With the oral agreement of the group, I recorded each of five group meetings. Megali Panagia's group was meeting every Wednesday night in an old coffee shop. This is an historical place for the anti-mining group in Megali Panagia, having been used and maintained throughout the years of the anti-mining struggle. The meetings were held in order for the local community to discuss their political and economic strategies, alliances with other movements and groups, and planning of forthcoming commoning activities. As with the face-to-face interviews, each member of the community has been de-identified/anonymised. This method helped me explore the local processes, practices, values, reasoning, and technologies that this anti-mining community has utilized to approach commoning and respond to large-scale mining.

Through the process of data analysis from participant observations, I managed to identify emergent patterns and themes. By doing multiple close readings of the five different sessions with Megali Panagia's anti-mining group, I categorized the different patterns and themes according to my explorational focus. I identified the topics of locating and planning commoning activities with other social movements across Greece, discussing funding strategies for the group members with judicial cases, and arranging the local events in which other local anti-mining groups participate.

Through participant observation, I noticed the power dynamics within the anti-mining group. I came to understand which leading figures had more influence than others, and noticed that gender imbalances are inscribed in the specific social context. These different tensions are depicted in my recordings, as well as written in my reflective diaries. Participant observation as an explanatory method (Laurier, 2016) helped me make sense of and understand the nuances, significancies, and perspectives of the different members.

Participant observation helped me in approaching the anti-mining community in Megali Panagia, as the community of this village had already assembled in a manner that operated as a collective, having specific days for their gatherings and meetings. In that regard, I, as a researcher, was bound to follow and adapt to their plans in order to respect their design. Participant

observation also helped me to learn more about the group's concerns about the anti-mining struggle and their relations with the other anti-mining groups, their environmental sensitivities, as well as exploring the power dynamics between community members. In that sense, utilizing participant observation as a method allowed me to understand the functionality of this specific anti-mining group (Jorgensen, 1989).

(iv) Document and Media Analysis

To inform my research and gain knowledge of the context of my thesis case study, I collected and utilized a range of general-background sources, including secondary data from documents, such as environmental assessment, the mining company's strategic plan, and previous research data. In addition to that, I also conducted media analysis. Media depictions of the situation around Skouries were helpful in understanding how particular stories can frame the anti-mining struggle and commoning responses to the large-scale mining imposition. Document analysis was utilized as complimentary reference to explore how the large-scale investment has been presented and justified by state authorities.

Document analysis has also allowed me to trace the background of the anti-mining struggle, the establishment of large-scale mining investment, and, partially, the depiction of commoning around Skouries. Document analysis requires that data be examined and interpreted to elicit meaning, gain understanding, and develop empirical knowledge (Corbin & Strauss, 2008; Rapley, 2007). This, as a method, foregrounded my understanding of the situation in the area and provided historical context to the tension. It also allowed me to extract valuable information from previous research conducted in relation to this case study. This method has been used complementarily to primary sources of data collection such as face-to-face interviews and focus-groups, and many of the data collected through document analysis have been re-evaluated, confirmed, or discarded when discussed with my participants.

Using the same logic, I used the internet to locate how popular mainstream media portrayed the anti-mining struggle, by searching the online archives of four national Greek newspapers (*Proto Thema* and *Kathimerini*, supporting the pro-mining camp; *Ef Syn* and *Kouti Pandoras*, supporting the anti-mining camp). I used keywords in title and text ("Skouries"; "gold mining"), and the main settlements in the study area. Any article with direct reference to the mining controversy was considered. In addition to that, all posts on the websites of Eldorado Gold and its subsidiary Hellas Gold were included in the data-analysis process, including the company's technical report. Accordingly, all posts published in the blog, *SoShalkidiki*, supporting the local

anti-mining struggle, were taken under consideration for data analysis. However, from the anti-mining blog, I examined one document more thoroughly. This document was a collective report concerning the impacts of large-scale mining in Skouries, written by Aristotle University researchers and local activists. Moreover, three academic books and five research articles written on the topic were also taken into consideration (see summary in Table 4.2).

Table 4:2

Key Secondary Data-Collection Sources: Pro- and Anti-Mining Media/Academic Literature

Online pro-mining media	Online anti-mining media	Academic books	Academic articles
ProtoThema online newspaper	*Ef Syn* online newspaper	*Frontlines: Stories of Global Environmental Justice*	"The golden 'saltomortale' in the era of crisis"
Kathimerini online newspaper	*Kouti Pandoras* online newspaper	*The Right to Nature*	"Politicizing the Body in the Anti-Mining Protest in Greece"
Eldorado Gold and subsidiary Hellas Gold websites	*SoShalkidiki* blog	*The Shock Doctrine*	"The Political Ecology of Austerity: An Analysis of Socio-Environmental Conflict under Crisis in Greece"
-	-	-	"Discursive positioning of actors in a gold-mining conflict in Northern Greece: Risk calculus, subjectification and place"
-	-	-	"Gold extraction in Halkidiki, Greece and local reaction: An analysis of the election results in the Aristotle Municipality"

Source: Author

By utilizing online media, I managed to better understand the logic behind the oppositional side of the anti-mining struggle and connect it with the broader frame of politics into which this case study has delved. I utilized this strategic approach as a supplementary tool to my research because it allowed me to strengthen the data collected from the primary sources of analysis.

(v) Writing Reflective Diaries

In addition to the iterative and participatory processes of analysis, I also wrote reflective diary entries on a weekly basis (Travers, 2011; Travers et al., 2020; Wallin & Adawi, 2018), which included my reflections from the field as a means of discovery and interpretation. To be forthcoming about the commitments that underpin my work, I was inspired by Van den Hoonaard (2002) when he noticed that one way in which scholars can remain cognizant of their positionality and work to interrogate their positions, is by writing reflective diaries

throughout the research process. By doing that, I allowed myself to constantly reflect on how my own experiences and assembled connections have produced my interests in and approach to this research field. Gibbs (2015) argued that research includes the process of shaping data to make sense. Writing then plays the role of a process that constantly affects the way data are curved into meaningful messages (p. 222). Throughout the research process, I produced brief notes that helped me capture and reflect upon the connections and investigate ideas the moment they emerged (Lofland et al., 2006). The process of writing reflective diaries was valuable in creating space for reflection on emergent themes and concepts, and to reach new insights concerning nuanced data that might otherwise not have emerged (Richardson & St. Pierre, 2008). An example of this concerns the concept of messiness that I derived from my observations of the everyday practices I experienced by living amongst the people who had participated in commoning practices during the period 2011-2015. As, for instance, the inconsistency of the environmental narratives that the anti-mining movement was supporting, and the practices against the protection of the environment, such as the perpetuation of polluting practices.

The written reflections on my integral experiences around Skouries were critical in helping me notice and contemplate the ways non-human agency was playing out in assemblages and commoning responses. For example, I understood with more depth how trees, gold, waters, cattle, bicycles, and institutions co-produce a particular space, how mining affects them, and how they resist it. Furthermore, through my interviews, I asked two of my study participants to reflect upon their own experiences within the surrounding environment in a reflective diary format, describing their understandings of non-human agency in their daily lives and commoning activities. Therefore, writing reflective diaries through the research project was another way of creatively engaging with and reframing the data, bringing together and making sense of the various collected material. Table 4.3, below, presents the different data-collection methods in a box.

Table 4:3

Data Collection Methods and Number of Participants Involved

Data collection method	Number of participants involved
Semi-structured face-to-face interviews	40
Focus-group interviews	30
Follow-up interviews	One after each focus-group meeting
Participant observations	57
Document and media analysis	24
Writing reflective diaries	2
Field observations	2

Source: Author

4.3.3.1 Data Analysis.

I transcribed all recorded interviews verbatim, with attention being paid to nuances such as enthusiasm or frustration. I familiarized myself with the data throughout the transcription process, and some key clusters of themes and interpretations emerged. Some initial open coding took place while doing the transcriptions, in which recurring terms and emergent ideas were recorded in accompanying notes (Corbin & Strauss, 2008). I then undertook a more rigorous close coding of the transcripts as key themes emerged.

The completed transcripts were uploaded into NVivo data-analysis electronic platform, and inductive thematic analysis was used to identify key patterns, categories, and themes (Boyatzis, 1998; Braun & Clarke, 2006; Green et al., 2007). I managed to extract patterns and themes by using NVivo when analyzing and synthesizing the data from group meetings and focus groups. I have coded and thematized patterns of responses based on their relevance to the four questions of each of the four case-study chapters of my project (see the following Table 4.4). One of the significant outcomes when coding peoples' responses was that there was a high rate of repetition describing how events occurred and the understanding of why commoning practices and the creation of commoning assemblages emerged around Skouries. This allowed for a better and more comprehensive cross-referenced approach to the questions my project deals with.

This process involved iterative coding through multiple close readings of the transcripts, until saturation was reached, and no new patterns or themes could emerge. As part of the research design, a non-linear approach was adopted in which collection and analysis of data were viewed as overlapping, intertwined processes rather than discrete steps. Therefore, data collection and coding occurred simultaneously throughout the research process, allowing for data collected in early interviews to inform, enrich, and guide later ones (Charmaz, 2011; Lofland et al., 2006). On the following page, I present the five central nodes that emerged during the transcription process. See Table 4.4 for details on the central thesis nodes.

Table 4:4

The Five Central Nodes that Emerged from the Nvivo Coding Process

Name	Description	Files	References
Background history of mining and the anti-mining struggle	How did the anti-mining struggle start?	18	103
Variations of commoning practices	What practices of collective care did you participate in?	5	175
Commoning relation to state authorities	What was the relation of the state authorities to these practices?	23	654
Non-human agency in commoning	What is the role of the environment in your practices?	5	32
Megali Panagia's approach to commoning	How does your political ideology affect your commoning practices?	5	86

Source: Author

These different themes influenced my research observations and helped me focus on elements that strengthened my analysis.

Overall, the combination of different methods supported the findings and enabled a greater depth in my analysis. Using different methods helped me confirm emerging themes, perceptions about commoning, and establish a good understanding about the context and background of events. The engagement with a diverse number of interviewees ensured that participants' realities corresponded with my representation of the data. I aimed for that so as to enable me to respect and represent the views of the participants as accurately as possible (Jonsen & Jehn, 2009).

4.4   Challenges and Limitations

In this section, I explain some of the challenges I encountered during the research and how I responded to these. I also explain some of the boundaries and limitations of my project. As with all doctoral research, there are time limitations that frame both what is possible to explore and the adopted methods. While participants were given as much time as was feasible to describe events and processes of commoning, it should be noted that their descriptions represent experiences that are reflections of a specific period, mostly of the past. This resembles a snapshot of time in which I tried to capture understandings of commoning practices that had taken place mostly between 2011 and 2015. These were the years during which commoning activities from the anti-mining community were at a peak, in response to the aggression and hostility perpetrated by state

authorities and the mining company in Aristotle Municipality towards those of the local population opposing mining.

An extension of data analysis might have revealed an even richer picture of the ecologies and practices of commoning around Skouries. More specifically, it was a constant challenge finding participants from villages that were primarily dependent on mining, or accessing other villages within the municipality that were 50 kilometers away from the place I stayed during fieldwork. Participants in my study willingly and happily participated and invested time from their personal lives to speak to me. Living amongst the protagonists of commoning activities allowed me to reflect on my own personal beliefs and helped me better understand how a vibrant community, with participants holding a wide variety of world views and conflicting social positions, had managed to overcome social barriers and fight for a common goal. In that sense, using different methods to approach my data allowed me to capture an extensive range of information and deal separately with some of the limitations posed by each method.

The Covid-19 pandemic imposed an additional limitation on the research. While I was planning to have the final field visit in March 2020, the Covid-19 pandemic broke out and cancelled my plans. My participants' and my own safety and health security took priority over any effort to collect the final data. Instead, I tried to turn to online meetings with some of my participants. However, this effort was not successful because of some technical constraints posed by the electronic communication capabilities in the region. There are two significant reasons for this. The first refers to the quality of telecommunication systems in areas distant from the big urban locations. And the second and most important is the low technological literacy of many of my participants, as is common with many Greeks in regional areas. Despite this experience, all participants were incredibly generous in sharing their stories and experiences. Interviewing various stakeholders, conducting focus-group and participant observations gave a multi-dimensional angle to each topic. These helped me build a clearer picture of the broader frame of the struggle and an understanding of the complexity of relations and angles by virtue of the different ways people experience life.

In exploring participant stories drawn from Ierissos and Megali Panagia social contexts, I have sought to remain attentive to the fact that there is a diversity of understandings about the importance of different events and commoning assemblages. This thesis does not aim to present the full diversity of understanding, nor that of commoning assemblages. Instead, it seeks to help narrate a small but rather significant selection of the multiple and complex ways in which ideas, commoning, and mining is shaping relations and assemblages around Skouries. Additional work

might explore how younger people have changed their way of relating to the environment and the way in which they form commoning assemblages, compared to the older ones who have participated in this research project.

Finally, the initial scope of my research had included photo responses taken in order to document understandings of non-human agency and practices of commoning. I abandoned this plan because of time limitations and the pandemic outbreak. My participants' schedules were tight enough, and I had to respect that taking photos was an extracurricular activity challenging for them to undertake at that time.

4.5   Personal Positionality

Consistent with a grounded epistemological approach, I recognize that my positionality has impacted both the process of data collection and how I have analyzed the data gathered (Mills et al., 2006). Staying in line with Kincheloe's (2007) argument, I believe that the researcher's assumptions and purposes always find a way into research, and they always make a difference to what kind of knowledge is produced (p. 6). Similarly, Instone (2015) pointed out that situated knowledges demand that our knowledge-making processes are never innocent or universal in character. In that sense, all knowledge is situated and grounded in a specific space-time continuum; yet universal claims can find their way to influence our research. However, one should not underestimate that knowledge-production is "always historical, located, political and partial" (Instone, 2004, p. 135). I have tried to reflect on this in my research.

As someone from Greece, I was able to engage with the Greek struggle groups with ease. Participants in my study responded positively to my invitation to participate in my research project with a willingness to communicate their struggle to a broad audience outside their community. Another important element concerns the style of discussions in the Greek context. Most discussions in a Greek setting usually occur spontaneously and in a warm interpersonal climate, unless participants are officials. In the case of meeting with an official, someone must book an appointment with them. This happened in only a few instances and only when officials had a tight schedule to follow. In all other situations, discussions had a very friendly and informal style.

My research is informed by my own standpoints, influenced by my own existing, current, theoretical, and epistemological commitments, and by my personal experiences with commoning and more-than-human understandings. Moreover, I would like to point out that this project is an overtly political and ethical one. I am invested in the idea that the problems that generate the

adverse outcomes of the Anthropocene epoch should be reconfigured through the collaboration between local communities, social and political institutions, and with the inclusion of non-human materialities in decision-making processes. As such, this position has influenced the research design and the interpretation of findings.

This research also seeks to question and challenge anthropocentric approaches. More specifically, those that are related to the endless-accumulation-of-economic-growth narratives that separate human from non-human and disregard socio-material limitations. In sharing the results of my project, I have aimed to be transparent about my own attitudes towards the value of community participation and to explore its potential to challenge the dominant separationist narratives of Nature/society.

I am also attentive to the fact that, as an active participant during the fieldwork, to some extent I have influenced the field setting and participants' responses through my questions and as an observer and researcher who comes into a group. The fact that I am a well-educated male played a role in forming the dynamics between my participants and me. The issue, then, is to account for this in my analysis and reflexive process. Therefore, the task for me as a case-study researcher is to try to be self-aware, reflexive and to recognize my own power to shape the stories I present in the thesis. Thus, I recognize that my perspective is always partial and situated.

In this regard, all different positionalities and perspectives should be perceived as equally valid and important. I take full responsibility for the way I have analyzed the data and interpreted them. Because, as Atkinson (1990) would argue, to adopt a reflexive and attentive stance towards my participants and the acquired data is rather appropriate. As a researcher exploring commoning practices and assemblages around Skouries, I have been aware that my stance and lens of analysis would direct my interpretation of the given data in a specific way. By being reflexive on this process, I have attempted to compensate for the possible limitations my theoretical stance poses on the attained data (Attia & Edge, 2017). Furthermore, recognizing the 'outsider' researcher status (Given, 2008), I have tried to engage and familiarize myself with the participants to gain rapport (Pole & Hillyard, 2016), allowing them to feel comfortable and that I could be trusted, and that my findings have respected their own positions and struggles.

4.6   Ethics and Interview Protocols

The project was conducted in accordance with the National Statement of Ethical Conduct in Human Research, with all research protocols approved by the Macquarie University Human Research Ethics Committee (Ref: 5201932958665). In addition to that, I received support and assistance from The University of Copenhagen in Denmark, which is the partner university to my Cotutelle PhD program. Consent was sought and granted from all participants. Some participants were happy to provide written consent whilst others gave oral consent, which has been recorded. Many of my study participants preferred to give oral consent instead of written, due to their confidence and the wish to keep things informal. Respecting that and having in mind that I am obliged to acquire consent for any recordings, I accepted their preference. Participants were informed that they could refuse to participate, they could refuse to answer questions, and that they could withdraw at any point. The ongoing negotiation of consent and disclosure was sensitive to the context of participants, with an awareness that there were some topics that might be difficult to talk about for some participants. In all cases, verbal consent for my participants' continued participation was sought at subsequent interviews. The anonymity of all participants has been kept.

Conclusion

In the previous sections and sub-sections, I have explained the methodological approach, data-collection methods, and analysis adopted in this project. This case-study approach has allowed me to examine commoning practices in ways that are alert to new-materialist perspectives. Research methods included both primary and secondary data collection: face-to-face interviews, focus groups, participant observations, and document and media analysis. Through these data-collection methods, I have been able to purposefully craft a research approach that is attentive to peoples' understandings, commoning assemblages, power relations and activities, which include the material-semiotic agency of the more-than-human that is often overlooked (Country et al., 2015; O. Jones & Cloke, 2008; Whatmore, 2006). I am aware that a case-study approach is a context-specific methodology. However, one can draw valuable insights that may inform other struggles across the globe. That is because the aim is not to present a grand theory through a particular study, but that this study informs and enriches the plurality of different struggles, and that it grants insights into how to create new connections between commoning assemblages and other institutions around the world in their efforts to mitigate Anthropocene-related problems.

Chapter 5:
The Large-Scale Mining Assemblage and the Commoning Assemblages that Support it

The [mining] project will change the land use from natural uses to semi-natural/artificial uses during the operational phase. Therefore, the impacts are considered negative, significant but partially reversible (Eldorado Gold, 2018, p. 171)

This quote from the mining company, Eldorado Gold, acknowledges but underplays the significant negative impacts of the Skouries mine. The change in "land use" has far-reaching economic, social and health impacts for local communities. Moreover, the shift from "natural to semi-natural/artificial uses" raises serious concerns about the environmental impacts of the mining project in Skouries (SoSHalkidiki, 2013a). In this chapter, I explore some of the effects that the large-scale mining assemblage around Skouries has on socio-material relations. I do this to generate insights into the logic that propels the Anthropocene epoch, and how this logic is transforming social-material relations in Skouries. Let us not forget that the mining assemblage is a collection of agents preoccupied with nurturing an urge for economic growth. Therefore, all mining activities have the perpetuation and expansion of economic growth as a final goal.

The chapter is divided into three sections. In the first section, I explore the relations between agents across different scales that make large-scale mining possible in Skouries. The second section focuses on the spatial and temporal smoothening processes that mining requires in its quest for efficiencies. I focus particularly upon ecosystem reshaping, or as I call it, *smoothening* (minimization) of socio-material relations around Skouries minefield with the contribution of large technological advancements. The idea of *smoothening* derives from the logic of creating a monoculture of relations that exclusively serves the purpose of mining. In the final section, my focus turns to commoning practices that miners utilize in order to support the minimization of socio-material relations around Skouries.

5.1   Cross-Scalar Mining Relations and Dependencies

This section focuses on how the mining assemblage affects socio-material relations around Skouries. I explore the mining location, the technologies, and the agents needed in order for the large-scale mining assemblage to come together, and how space and alliances are being transformed around Skouries. For the mining assemblage to be fully functional, a diversity of different agents and agencies across different scales must align. The importance of cross-scalar relations reaches right to the top of politics, as evidenced by a previous conservative prime minister, Antonios Samaras, who has stated that "the mining investment in Skouries will operate whatever the cost" (in Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019). The mining investment is taking place as a fast and reliable solution in response to the economic problems that the Greek State and the local economy in the municipality were facing during the years of the economic crisis.

During the economic crisis, which started in Greece in 2010, both social democratic and conservative Greek governments had sought opportunities to attract global industries that could propel national economic growth. Their goal was to attract large-scale investments to meet the requirements of the Memorandum of Understanding (MoU) made between the Greek State, International Monetary Fund (IMF), and the European Central Bank (ECB). The MoU set out austerity measures and large-scale investments in exchange for loans, until the country could pay off its public debt to global lenders. The large-scale mining investment in Skouries has been positioned by successive Greek governments as an industry that could help to relieve a large share of the Greek public debt (Avgeropoulos, 2012; Calvário et al., 2017; Tsavdaroglou et al., 2017).

Further reinforcing this discourse, the Canadian mining company, Eldorado Gold, and its subsidiary, Ellinikos Xrysos, have promised to boost economic growth in Greece (Eldorado Gold Blog, 2017; Tsavdaroglou et al., 2017). This is the first time a company has convinced a Greek government that it has the technological know-how to proceed with a large-scale operation to extract large quantities of valuable metals in Skouries, especially gold and copper (Eldorado Gold, 2018; SoSHalkidiki, 2013a). This is despite small-scale mining in Aristotle Municipality causing a number of social and environmental problems for the local communities (Benos, 2012; Environmental Council of Aristotle University of Thessaloniki, 2012). Yet, opposition to small-scale mining was not fierce, as the negative effects had been confined to within the municipality.

A participant in one of the focus groups stated:

> *For years we did not pay serious attention to the consequences of mining because we thought that the positive outweighs the negative. We thought since the ones directly affected by mining did not complain, why should we care? On many occasions, here in Ierissos, we were positively inclined towards mining.* (Focus Group 2, May 3, 2019)

The new mining assemblage, however, was much larger in scale, and bore the prospect of significantly impacting the socio-material conditions around Skouries and the communities depending on them.

Another critical factor is the commitment from the mining company to the Greek State and labour unions of employing many unemployed mine workers in the area (Eldorado Gold, 2018). The Greek State set as a condition that the company should employ 90% of the then-unemployed local workforce. By agreeing to that, the mining company took up the responsibility of caring for the social welfare of the local communities in return for their acceptance of mining as the developmental model of Aristotle Municipality. An example of this is when the mining company provides resources to the local authorities, such as gas and spare parts for the police, and garbage trucks to the municipality. A participant pointed out: "*The municipality did not have money even to put gas in the garbage trucks. We were completely dependent on the mining companies*" (Interview GZ, November 11, 2019). In other words, the mining companies have managed to gain enough social, economic, and political influence at a local level to create a significant dependency of local authorities upon the mining companies. As a participant in my study reflected, "*Here, the mining companies have replaced the State*" (Interview DV, May 3, 2019).

In order to replace the functions of a state, the company has developed a more complex set of relations than just extracting valuable metals from a particular space. For example, the attachment and dependency of local communities to mining industries is not unique to the particular case-study phenomenon. Mining companies can provide significant social benefits, like housing, economic benefits, and family friendly schemes in a diversity of social contexts on all of the different continents (Gough et al., 2019). Mining investments can also provide a stable economic ground for local communities and can cover national energy demands (Svobodova et al., 2021). In addition, the entanglement of mining companies and local authorities in Aristotle's municipality has led municipal authorities to be "*highly dependent on the private funding from the extractive processes*" (Interview GIO, May 16, 2019). This economic dependency of the local

authorities on the mining companies would also become a point of reference for the anti-mining community and its demand for the disentanglement from mining. As I show in Chapter 7, political commoning would be grounded on this demand.

The mining assemblage brings together agents that promote specific modes of development in Skouries, creating new scales of dependency on local, national, and global stakeholders. For the first time, technological advancements can provide the company with the ability to extract valuable metals at an unprecedented scale, utilizing equipment from far-off places. The technological advancements, such as the heavy machinery and extracting strategies that the mining company aims to apply in Skouries, provide the ability to change the scale of the quantity of valuable metals extracted. The annual estimated amount of gold and copper extraction in a 23-year period is 140,000 oz and 66.9 Mlbs, respectively (Eldorado Gold, 2021). The whole project is estimated to bring around 2 billion euros to the Greek State (Iefimerida, 2021).

The new machines, technologies, and facilities are going to massively expand the scale of mining operations in Skouries. For example, excavators and bulldozers will be used to expand the previously existing open-pit crater of 216 metres to a diameter of 750 metres, and deepen it by a minimum of 220 metres (Eldorado Gold, 2018). The mining field is only a few kilometres away from Megali Panagia. According to some people from Megali Panagia, "*The open-pit is in itself supposed to be bigger than the whole village of Megali Panagia*" (Participant Observation 3, May 17, 2019; Apostolakis, 2014). The total size of the mining-operation space is estimated at 264,000 acres (Panayiotopoulos, 2017). The company has already acquired a license for using heavy machinery to build the foundations of the processing plant (Meynen, 2019, p. 19).

The mining assemblage changes not only the scale of valuable metal extraction, but it also creates new dependencies. For example, China or other countries are potential partners to this assemblage as strategic agents and experts in chemical-waste management and valuable-metal processing (Sakali, 2014). For the mining company, chemical waste produces new forms of economic growth. Tracks are utilized to deliver large quantities of chemical waste to the Port of Thessaloniki. From there, big tankers ship the waste to Chinese factories that use it for other purposes (Kadoglou, M. [@antigoldgreece], 2013b). The mining activity produces new material quantities, both valuable metals and chemical waste that are distributed to new markets, which will boost the economic growth of the mining company.

The political climate and the agreements formed at the national and international level play an important role in the maintenance of the mining assemblage over time. For example, Greek

pro-mining governments have passed a series of laws that make it easier for a large-scale mining company to start operating in Skouries at the expense of the surrounding ecosystems, such as through the abolition of the European nature-protection net, Natura 2000 (Greenpeace Hellas, 2020; Kadoglou, M. [@antigoldgreece], 2020; Malama, 2020). The logic behind this is based on the dominant economic logic that EU member states need to achieve high levels of economic growth for the EU to remain competitive with economic superpowers (Lekakis & Kousis, 2013, p. 310). This political climate and its international agreements create a supportive atmosphere for large economic projects, unhindered by environmental or social concerns. In the next section I go into depth on the smoothening process the mining assemblage aims to bring to Skouries.

5.2   Smoothening the Skouries Minefield

This section explores the effects the cross-scalar mining assemblage is having on social and material relations around Skouries. To explore this, I focus on the changes that occur in spatial and temporal terms. I divide this section into two subsections: one for the spatial and one for the temporal dimension. For the purposes of the thesis, I adopt the term *smoothening* to refer to the means of applying, performing, and maintaining relations that enable mining to operate by discarding those that disturb it. By doing so, the mining assemblage aims to eliminate the multiplicity of different relations, including amongst trees, waters, various species, and the activities that depend on them, and to transform the space into a particular landscape that will serve only one purpose uninterruptedly, that of mining. To better understand the smoothening process, I analyze data from different sources. For the description and analysis, I use examples from the three different phases of the mining process as presented in the company's technical report document (Eldorado Gold, 2018). These are: the preparation of the minefield for the mining operation, the period of the mining operation, and the rehabilitation phase.

5.2.1   Spatial Smoothening of Skouries Minefield

In 2007 the Canadian corporation Eldorado Gold acquired 95% of the minerals and valuable metals in the Aristotle Municipality. The Skouries minefield is only one of the fields the mining company has acquired within the municipality. In order for Eldorado Gold to maximise value from its investment it needs to transform the space and remove all material relations that block the smooth operation of mining (Eldorado Gold, 2018, p. 171).

5.2.1.1 Smoothening Away Trees and Waters.

The preparation phase has involved uprooting a large expanse of the surrounding forest. As Eldorado Gold admits, deforestation of the area has a significant impact on local ecosystems, yet is a necessary part of the extraction process (Eldorado Gold, 2018, p. 169). The deforestation process has already been taking place since 2011. More specifically, mining, miners and machinery have already shaped Skouries in a way that there are no longer any trees in a large area surrounding where the mining facilities are located. According to activists and campers that know the mountain, the change to the mountain has been radical (Papada, 2015). The technological progress has allowed the Eldorado Gold Corporation and its subsidiary Ellinikos Xrysos to change the landscape in only a few months of intensive work.

For the investment to be in full operation, a total of 2,500 acres of forest needs to be cleared. An alternative would be to leave the roots of the trees untouched, which would provide the potential for trees, through connections with other species, to find their way to regenerate themselves. In turn, tree roots provide both oxygen and nutrients from the ground to their trunk and leaves, whilst the roots of a felled tree can provide neighbouring trees with sugars and other nutrients. A world of other organisms like soil fungi benefit from tree roots, with fungi creating a network that allows for the sharing of an enormous amount of information and nutrients from tree roots to the underground (Wohlleben, 2017). However, keeping the tree roots in the ground would disturb the mining extraction, with the roots operating as a blockade for the excavation process and potentially disrupting the smooth operation of the machinery (Eldorado Gold, 2018). As such, the mine chooses to completely clear those parts of the forest that are in the way of mining operations. As one of my participants mentioned to me:

> *Imagine walking amongst trees and running waters and [you] suddenly reach a point where something feels completely out of context. Inside a forest so big you can get lost inside it; you reach a point where you meet a desert spreading as far as your eyesight.* (Interview KS, May 10, 2019)

Figure 5.1 provides a visual illustration of the effects of the large-scale mining upon the forest.

Figure 5.1

Skouries Minefield

Image has been removed as it contains copyright material.
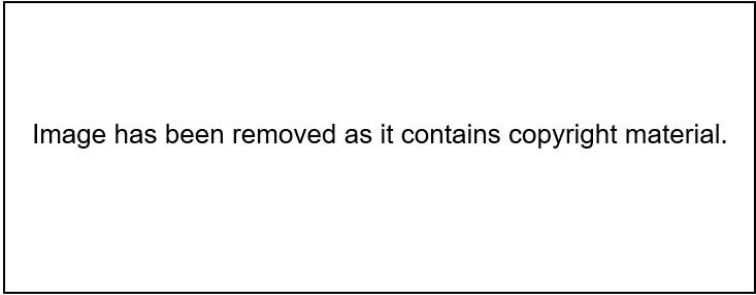
Source: https://www.mining.com/ranked-top-10-lowest-cost-gold-projects-on-the-globe/

Deforestation also raises concerns because of its effects on the microclimate and on the dispossession of wild animals and birds that will move towards the city (Environmental Council of Aristotle University of Thessaloniki, 2012; Lykos, 2020). There is a fear that many wild animals living inside the Skouries Forest could migrate into the urban environment to find food and shelter. The recent experience of the Covid-19 pandemic is the latest example that shows the damage deforestation can produce to ecosystems and society and to (inter)national security (T. Jones, 2010; Oshewolo & Nwozor, 2020; Tollefson, 2020). In other words, deforestation can produce negative effects at local, national, and international levels by threatening local ecosystems, national economies, and international security.

In this space smoothened of trees, one can notice machines scattered all around getting ready to extract gold and other valuable metals. This technological equipment includes what the previous mining company, TVX Hellas, left behind after its bankruptcy. In addition to that, for the extraction process to start, the current company has invested in the construction of an underground backfill plant, a pit tailings dam, ancillary facilities, and offsite infrastructure (Eldorado Gold, 2018). Moreover, machines and vehicles such as bulldozers, haul trucks, excavators, loaders, blast-hole drills, a dozer, and a grader are also a vital part of this assemblage (Eldorado Gold, 2018).

Adding to the machinery, the company took over the previous company's offices in Stratoni village, essential for the planning and execution of the mining processes. Figure 5.2 demonstrates the way in which technological equipment is working towards the smoothening of the Skouries space.

Figure 5.2

How Technology Contributes to the Smoothening of Space in Skouries

Image has been removed as it contains copyright material.

Source: https://www.lifo.gr/now/greece/eldorado-tha-kleisoyme-tis-skoyries-den-paroyme-adeia-os-tin-pempti

Similar to the deforestation process, technology has to be utilized to remove the water from inside the mountain. Kakavos Mountain's underground waters are described as a disturbance to the extractive process (Eldorado Gold, 2018). The process of draining the mountain is not yet underway but it is necessary for the metal extraction. The mining investment requires a dry environment where metals can be isolated from liquids and gases (Eldorado Gold, 2018; Panayiotopoulos, 2017). Participant KP explained: "*For the mining company to access the metals, miners first need to drill holes all across the mountain to drain the underground waters*" (Interview KP, December 11, 2019). The mountain is going to be shaped like a giant strainer. The reason for draining the waters, as Participant EIR noticed, is:

> *There are two problems when metals encounter water and air. First, oxygen, which*
> *is a basic component in both water and air, is an element that can potentially lead*

to metal corrosion. This can happen when metals, water, and air are coming in contact under conditions of high pressure. High pressure can occur due to drilling or dynamite explosions, the two approaches the company will use in Skouries. (Interview EIR, May 12, 2019)

Oxidization results from increased stress levels in the bacteria and microbes that participate in the processes of metal composition and transformation that would usually take centuries (Gadd, 2010). More specifically, bacterial stress is a response to the highly intensive and continuous extraction process and the increase of air pressure because of drilling and explosions (Lagerkvist & Zetterlund, 1994). It is estimated that 4 to 6 tons of dynamite will be used daily for seven consecutive years to operate the open pit (Panayiotopoulos, 2017). The damage that this causes to the landscape is immense. The violent process of extracting the metals results in the production and maintenance of an acidic environment, which affects the valuable metals (Fashola et al., 2016). Participant GL explained:

When someone drills a hole into the ground, the air comes into the earth and mixes with the underground water and the Sulphur compounds; then a bacterial reaction occurs. This reaction produces mineral oxidation which will contaminate the clean water and then, through the water, animals, plants, soil, cattle and humans. The higher the intensity of drilling is, the higher the amount of contamination of different ecosystems will be. (Interview GL, May 15, 2019)

Due to the shock they receive from the mining pressure, bacterial microorganisms will create an environment that is hostile to all living organisms around them. Contamination of air, water, and soil can last for more than a hundred years (Panayiotopoulos, 2017).

Once the mountain is drained of its underground waters, the large-scale mining operation can commence. Then the company will need to separate the valuable metals from the rest of the minerals attached to them. The company itself admits that the separation or purification process leads to metal intoxication (Eldorado Gold, 2018, p. 23). The purification process never gives an absolutely pure final product because absolute purity would mean the liquification of a valuable metal (Brichet & Hastrup, 2014). The materials separated from the purified product transform into toxic waste, which will form two artificial lake deposits. The two waste 'lakes' will be made by constructing two dams of 131 and 143 metres, accordingly (Brichet & Hastrup, 2014), which will store 44 million square metres of total waste. The space selected for creating the artificial lakes is on a seismic fault (Papazachos, 2016). Eldorado Gold officials are confident that the dam

construction will be able to withstand a possible earthquake, even if around 7 Richter magnitude (Remoundos, 2017).

So far, I have described how the mining assemblage discards non-human agencies that threaten the smooth operation and rehabilitation process of the large-scale mining. However, the smoothening process has consequences for those social relationships reliant upon material processes involving water and forests. As a participant explained to me: "*My father used to do a lot of different jobs, he was always dependent on the environment around Skouries, the trees and water; the same goes for many others here, and their families*" (Interview GVN, May 16, 2019). Many people in the communities around Skouries are highly dependent on the nature around them. To put it in a broader context, the agency of trees and the waters sustain a variety of social and economic activities, such as cattle-rearing and beekeeping. As they depend on the non-human materialities that the company is destroying, trees and waters are also perceived as a disturbance to mining (Eldorado Gold, 2018; Papadopoulos, 2018; Puig de la Bellacasa, 2017). As one of my participants pointed out, "*The company wants to impose a mining monoculture*" (Interview ML, May 19, 2019). Mining itself is a developmental activity oriented towards the accumulation of economic growth through the spatial transformation of Skouries and the smoothening over and dispossession of other livelihoods.

5.2.2   Temporal Smoothening in Skouries

To understand the effects of the mining assemblage in temporal terms, I explore how the mining assemblage affects the different temporalities of the agents within Skouries. The aim is to understand how material relations are being reorganized in a way that serves the mining operation, which has a 25-year time frame (Eldorado Gold, 2018), but that discards other temporal patterns. I first focus on development temporalities, then on the more-than-human ones, and finally on the rehabilitation temporalities. By doing this, I show how different temporalities are affected by the logic that prioritizes the economic growth that motivates the operation of the large-scale mining assemblage.

5.2.2.1 Development Temporalities. People from the local anti-mining community have noticed that "*Greek governments perceive the ones resisting mining as underdeveloped. For that reason, they treat us in the worst possible way*" (Focus Group 1, March 13, 2019). However, the Greek authorities see the mining assemblage as a way to progress and develop the local area in a relatively short time frame (Savransky, 2012; Schrader, 2012). Following this narrative, local authorities, governments in favour of mining, and mainstream media have portrayed the anti-mining struggle as "anti-developmental reactions" (Calvário et al., 2017, p. 80).

Urban space is organized very differently across the particular villages in Aristotle Municipality. As study participants from the anti-mining communities have noticed, "*The governments do not care for us. Our village feels like it is back in the '80s. There are low quality of service, low quality of infrastructures, and limited connection to the rest of the world*" (Interview MAR, May 16, 2019; Focus Group 3, May 21, 2019). This contrasts with what people say and what I have seen in those villages of the municipality with a strong mining tradition. Again, my participants have explained: "*The local community in Stratoni has everything they need. The mining company provides everything for them, in collaboration with local authorities. Stratoni feels like a place from this decade, unlike us*" (Focus Group 3, May 21, 2019).

From my personal experience, some of the information that my participants refer to concerns how space is organized through time; how it is maintained and repaired in a place like Ierissos village in comparison to Stratoni. Ierissos is a village predominately dependent on tourism and fishing. In Ierissos, there are fauna and flora next to the highway. Houses have cracks, and flowers grow in those cracks. At the same time, animals, especially wild dogs, run freely in the village, sometimes putting peoples' safety at risk. On the other hand, the mining village, Stratoni, has a very well-structured street layout. Houses are made of stone with thick walls, while no animals run freely in the streets, and the sidewalks are well-preserved. There is quite clearly a difference in public-infrastructure investment and maintenance where one village seems behind the other in terms of development. The disparate levels of development project a different representation of time. Ierissos appears to be an underdeveloped village. The reason for that is because space is not clearly oriented towards the dominant developmental activity. Unlike Ierissos, Stratoni has a clearly organized structure: authorities, people, and machines work together to maintain the village in a 'modern' fashion. One village appears 'backwards' and the other 'forwards', a clear temporal strategy to encourage mining support and dependencies. Figures 5.3 and 5.4, on the following page, portray the contrast between the infrastructures of the two villages.

Figure 5.3

Infrastructure in Stratoni Village

Source: https://www.halkidikitravel.com/el/περιοχες-της-χαλκιδικης/βορεια-χαλκιδικη/στρατωνι-χαλκιδικης-53
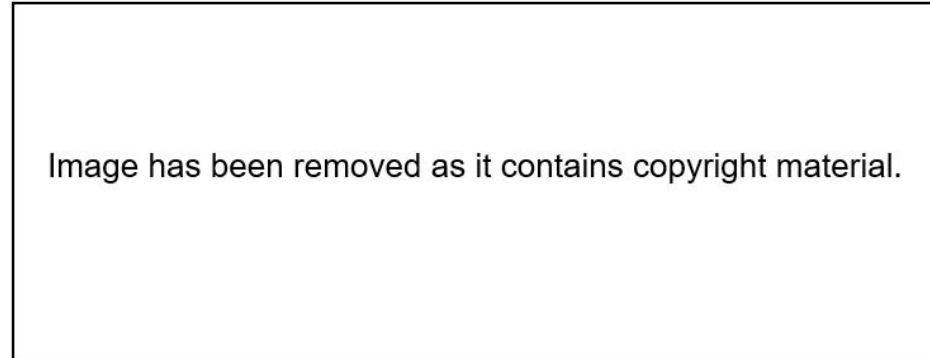
Figure 5.4

Infrastructure in Ierissos Village

Source: http://travelguide.halkidikibooking.gr/listing/ιερισσός/
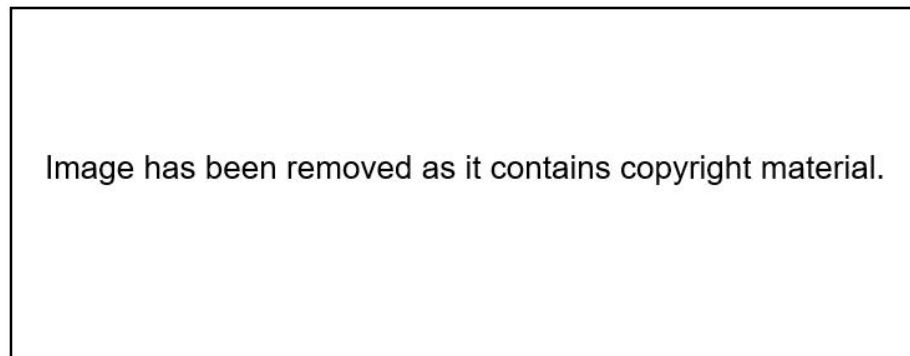
5.2.2.2 More-than-Human Temporalities. A second example of how the mining assemblage manipulates temporalities is its concentration on time frames of extraction and profit over anything else. In the case of large-scale mining in Skouries, speculation translates into the pursuit of economic growth through extracting valuable metals over the course of 25 years. During this period of large-scale mining, relations between trees, the soil, and water will be inhibited and controlled. The process of smoothening space for the mining operation means the eradication of non-human communities and their unique temporalities. Needless to say, the recovery of different

connections may never occur, or in some cases might take centuries. For example, it takes 200 years for coniferous trees like those in Skouries to reach their full potential (Baker, 2017). However, for a smooth mining operation, eradicating disturbing materialities is a precondition to minimizing economic delays. Time is shaped in a way that is oriented towards the extraction of resources efficiently (Le Corbusier, 1930/1991). A diversity of more-than-human temporalities is replaced by a mono-dimensional one (Puig de la Bellacasa, 2015, 2017).

Space is shaped in a way that serves one particular purpose in the most time-efficient manner. Since this newly established temporality has one purpose only, it also imposes one monotonous tempo: the tempo of cumulative large-scale production of valuable metals through technoscientific means. In addition to that, the smoothened space and the utilization of large-scale technologies allow the mining assemblage to set the pace of extraction. The cleared space becomes free for the acceleration of production, which is possible because of the technological advancements such as enormous drills, and large-scale technological resources such as the tons of dynamite continuously used during the mining operation.

Twenty-five years is all the time the mining assemblage has in order to maximize its levels of economic growth through the operation of valuable metal extraction. Prioritizing and fostering economic growth creates very particular time frames that are relatively short compared to the unique and differentiated time frames trees and soil communities have in their lifespan. In addition, the mining assemblage time frames are constructed upon the premise that, once the metal extraction is complete, new horizons of economic growth will appear somewhere else around the globe and the smoothening process can be shifted elsewhere. In contrast to that, the trees and the other soil agents will live and die in the same space. Once relations are altered, the landscape changes, as do the individual and collective social identities, the capacity for caring, and the character or activities that had defined the space prior to large-scale mining. The loss of activities, like beekeeping or logging, will reduce the capacity of people to care for the forest, the animals, and the trees, and will lead them to change the character of their activities – which in turn will change their social identities as beekeepers or loggers. The mining temporalities linger long after the mining project concludes, affecting all that comes after.

Another example comes from contrasting aquatic temporalities. Clark et al. (2017) argued that water is a 'time-substance' embodying multiple potentials and agencies. Participant AP described that, "*For centuries now, people [have drunk] the water coming from within this mountain*" (Interview AP, May 4, 2019). The waters of Kakavos Mountain are part of the identity of the mountain. Generation after generation have connected to the waters of the mountain in

various ways. From farming and cattle breeding, to hiking, drinking, cleaning, and playing, people have been entangled with the water's agency.

The waters are shaped and in turn shape the morphology of the mountain, provide safe harbour and life for a variety of different species. It is not by accident that the most prosperous civilizations in human history designed their spaces, towns, and empires around the water (Armiero, 2011; Juuti et al., 2016; Kallis, 2010). Water has a powerful agency expressed through its ability to maintain life through time, to shape places, and to provide a space for various socio-material relations to flourish. However, for the mining assemblage, this agency and water's ability to maintain life through time is an obstacle to the smooth extractive operation.

By removing the mountain groundwaters, the mining assemblage manifests the spatial domination of an activity that is preoccupied with a compulsion for economic growth. It shows that these operations prioritize the mono-dimensional temporality of the extraction process over a diversity of existing and intertwined material water temporalities. The elimination of water's temporalities will limit a great variety of other temporalities, including soil communities, animals, and plants. In that sense, the dominant mode of economic growth, that of mining, will for the next 25 years discard any relations that require the various water temporalities to flourish.

Finally, mining is out of step with geological time. For example, since antiquity, Kassandra Mine in Skouries has produced 33 million tons of valuable metals altogether (Eldorado Gold, 2018). Now, Eldorado's ambition is to extract 380 million tons of gold in a bit more than two decades (Eldorado Gold, 2018; SoSHalkidiki, 2013a, 2013b). This rapid extraction contrasts to the long geological periods required to produce gold. For example, valuable metals such as gold have unique histories that blend extra-terrestrial spatio-temporalities to soil ones. Arriving with asteroids, gold needs centuries in order for it to blend in with the Earth's materialities. Through time and socio-material processes that include bacteria, water, and other human and non-human activities (Helmenstine, 2019), gold becomes integrated with other minerals and metals such as ore and copper. The process of purification instantly destroys lively connections amongst the gold and other materials that took centuries to form. In other words, this is a process of cleansing and extracting the value from vibrant materiality by transforming it into a resource.

5.2.2.3 The Rehabilitation Phase: The Triumph of Technoscience. According to the technical report published by the mining company, all the different technological equipment and strategies aim to smoothen the space while producing the minimum environmental impact (Eldorado Gold, 2018, p. 27). The company has two reasons for wanting to minimize possible

impacts on Skouries. Firstly, the company had agreed to operate with environmental responsibility as described in the Greek law (Bechlivanis, 2020). Secondly, the company's rehabilitation plan refers to Eldorado Gold's holistic strategy to restore the natural environment to its pre-mining state at the end of the mining operation, 25 years from now (Eldorado Gold, 2018). Large-scale technological advancements are at the centre of this restorative phase.

The company makes use of a narrative presenting that there can be both irreversible damages and, at the same time, technoscientific means that will restore and maintain environmental diversity (Mert, 2019a; Puig de la Bellacasa, 2015). Company officials claim that Eldorado's "progressive reclamation" biodiversity program is well-monitored and will help the forest recover in an "organized manner" (Eldorado Gold, 2018, p. 7). The rehabilitation phase will be achieved through large-scale technological interventions that will reforest the deforested area of the mining field at the end of the mining activity. Eldorado Gold aims to use a variety of technological advancements to create a space that will resemble the space of Skouries before large-scale mining. Firstly, the company aims to close the open pit with the waste stored in the toxic dams during the operational phase. Secondly, it aims to reforest the space after the operational phase takes place. Thirdly, the company seeks to reinject water that has been collected into extensive underground water deposits back into the mountain's boreholes (Eldorado Gold, 2018, p. 17). And finally, Eldorado has a plan to apply a large-scale process of restoring diversity similar to the currently existing non-human species (Eldorado Gold, 2018, pp. 20–22).

The smoothened space from the operation phase in Skouries will, during the rehabilitation phase, follow a very particular orderly designed approach. For example, as happened with other rehabilitation projects previously in the municipality, reforestation projects will take place in particular locations, which will allow a clear separation between these and spaces planned to be used for future large-scale productive activities (Eldorado Gold, 2014b). Concerns over whether the natural environment can be returned to its pre-mining condition have raised questions about the feasibility of rehabilitation, since previous experience points to the fact that the natural environment cannot return to its pre-mining condition (Agboola et al., 2020; Mavrommatis & Menegaki, 2017; Mentis, 2020; Wang et al., 2020). In addition to that, Eldorado Gold, contrary to what it presents the rehabilitation phase will do, admits that there will be significant, and as stated in the technical report, "irreversible" damage to some of the local ecosystems from the mining operation and the waste facility (Eldorado Gold, 2018, p. 169).

The mining company's rehabilitation plan raises two concerns. The first concern refers to the company's strategy for recovering diversity. More specifically, there is the question of how a

smoothened space will be returned to the same form of state as prior to large-scale mining. The company aims to produce ecological diversity by creating enormous organized spaces with particular crops that have economic value, and greenhouses controlled by big generators that balance the soil, water, and temperature condition within them (Eldorado Gold, 2018). Within these enormous and well-organized spaces, the company is planning to grow crops and to utilize part of the existing mining labour force as farmers who will take care of the enclosed farmlands. However, diversity inside these technologically induced spaces does not resemble the pre-mining space. The rehabilitation focuses on harnessing the diverse agencies of non-human elements for the production of more economic growth. Crops developed in such a sterile environment are not meant to create connections devoid of economic value. Everything produced is supposed to be sold. In addition to that, these controlled environments allow the space outside of them to be reused for other economic activities. Therefore, when the mining company refers to recovering diversity, it means a technologically controlled diversity that is cared for by humans and that will produce economic profit: a diversity that can be monetized. The following Figures 5.5, 5.6, and 5.7 show what already-rehabilitated spaces in Olympias look like.

Figure 5.5

Rehabilitation Phase: Olympias Nursery in Aristotle Municipality

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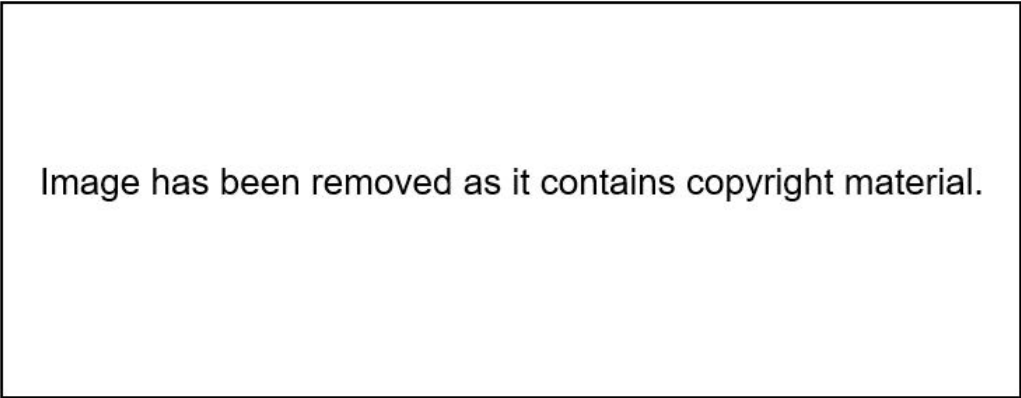
Source: https://blog.eldoradogold.com/rehabilitation-in-action-from-tailings-ponds-to-green-space-in-greece/

Figure 5.6

Rehabilitation Phase: Organized Farming in Olympias Village, Panoramic View

Image has been removed as it contains copyright material.

Source: https://www.news247.gr/perivallon/i-ypeythyni-metalleytiki-drastiriotita-tis-ellinikoschrysos.9251895.html?
fbclid=IwAR1nTpIogAVzre6dnSmzG21x85wzXyAOXj4evhmYysRJrWBBVMH83zsc
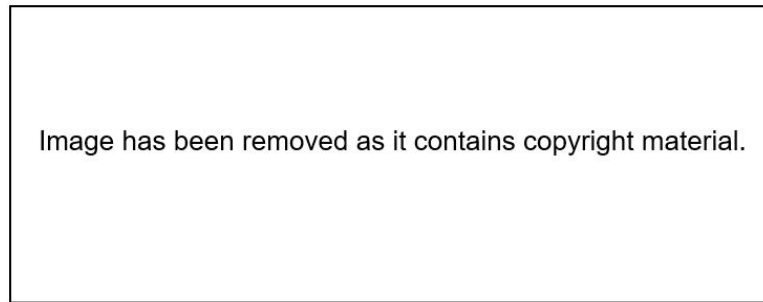
Figure 5.7

Rehabilitation Phase: Organized Farming in Olympias Village, Side Elevation

Image has been removed as it contains copyright material.

Source: https://www.news247.gr/perivallon/i-ypeythyni-metalleytiki-drastiriotita-tis-ellinikoschrysos.9251895.html?
fbclid=IwAR1nTpIogAVzre6dnSmzG21x85wzXyAOXj4evhmYysRJrWBBVMH83zsc
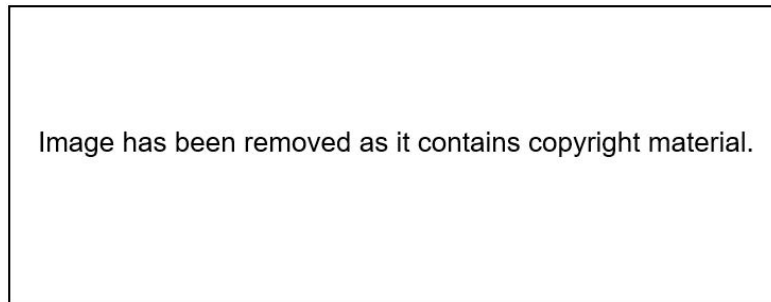
The second concern derives from existing research on the mitigation of the adverse effects of mining rehabilitation, and the strong trust in technoscience resolving all problems created during the mining-operation period. Ethnographic studies have shown that there are many unintentional negative effects that technoscientific approaches impose on local communities, indigenous societies, and the environment (Arellano, 2011; Carvalho, 2017; Haddaway et al., 2019; Klein, 2014; Mavrommatis & Menegaki, 2017; Ştefănescu et al., 2013; Whyte, 2018). Efforts to restore material space also affect social space. For example, refilling mountain boreholes with water that has been exposed to chemicals entails the danger of poisoning, and the abrupt curtailing of activities such as animal feeding and crop fertilizing (Panayiotopoulos, 2017). The same could happen if the waste dams break as a result of an earthquake. This could lead to water contamination with a level of arsenic sufficient to kill every human being on the planet, three times over (Meynen, 2019). The concentration of heavy metals and chemicals, such as arsenic in water and soil from the mining process, could lead to the poisoning of humans, animals, trees, and plants

(Environmental Council of Aristotle University of Thessaloniki, 2012; SoSHalkidiki, 2013a). As a participant in my study pointed out, "*If they poison the underground waters of our mountain, our villages will become deserted. Everyone will leave to save his and his family's life*" (Interview AP, May 4, 2019).

In addition to problems referring to environmental and social degradation, there are those concerning community-knowledge exclusion. Studies point to the fact that proponents of technoscience tend to exclude local forms of knowledge and commoning activities from decision-making processes about the rehabilitation and maintenance of material spaces. The minimization of the diversity of responses weakens the responsiveness to social and environmental problems, which can then lead to ecological disasters (Huber et al., 2017; Whyte, 2018). Adding to this climate of fear and uncertainty, a recent study found a serious problem with how companies present the rehabilitation processes and the actual results on different ecosystems (Wang et al., 2020).

The overall argument of this subsection is that the imposition of an accelerating mono-dimensional temporality of a productive activity within a particular and limited time frame disregards the slow temporal processes and the unique productive and reproductive activities of the different materialities affected by it. I also argue that state and private agents perceive the diversity of socio-material relations as resistance to the forward movement of development. At the same time, the mining assemblage is presented as the only rational developmental project for the municipality. In other words, the mining assemblage tries to apply a one-size-fits-all model of time, regardless of the different needs of existing human and non-human materialities. Moreover, through the rehabilitation temporality, I argue that the company is trying not only to control and manipulate socio-material relations across space in the present, but also in the future. Under this light, time within the mining assemblage is always synchronized with the demands of economic growth. In contrast to that, as political theorist Lars Tønder (2017) has suggested, the Anthropocene frame encourages us to think that privileging one kind of temporality at the expense of others is no longer adequate to allow us to mitigate the adverse effects of this new geological epoch. Yet, there are also collective practices that support this kind of minimization of socio-material relations in spatial and temporal terms. In the next section, I focus on the commoning practices that have formed to support these new mining spatialities and temporalities.

5.3   Pro-Mining Commoning

In this section, I explore how particular commoning assemblages have formed in support of the smoothening process in the mining assemblage in Skouries of Halkidiki. The section begins by profiling pro-mining identities, before surveying the tensions mining has caused in the villages. I then examine two Christmas Villages set up by pro- and anti-mining communities, and how the pro-mining commoning assemblage was harnessed and sustained by state- and private-sector support.

5.3.1   Mining Identities

Unlike other mining cases around the world where the mining workforce is predominately remote (Kaczmarek & Sibbel, 2008; Vojnovic et al., 2014), the mining villages around Skouries have a long-standing mining tradition. The current generation of miners is the third generation of miners to have lived in the municipality. The miners hold the identity of the hard-working man of manual labour as something to be proud of (Velegrakis, 2015). Grandfathers raised sons, and their sons were raised, knowing that mining would provide an economically secure future. As a participant pointed out, "*When a kid is born, the wish they give him is to grow with a lamp on his forehead*" (Interview AP, May 4, 2019). The lamp is a strong symbol of a tradition and identity referred to as 'miners working underground'. A father was proud to see his son working in a job made for hardworking working-class people. Traditionally, the father and then the son were supposed to be the providers and take care of the family. This practice of care has been nourished and maintained with few changes through time until the present day.

Nowadays, the complexity of mining jobs has changed. As a participant pointed out, "*Most of my friends from the mining villages study at the university to become geologists. A lot of them return to do their internships at the offices of the company, and then they get a job there*" (Interview STP, March 16, 2019). Some of the educated younger generation take office responsibilities instead of doing manual labour (Hellas Gold, 2020). In addition to this, manual labour remains in demand. Machines do not operate without human labour. To cover manual labour, the company hires workers from the local society (Eldorado Gold, 2018; Velegrakis, 2015), which has helped many families alleviate difficult economic situations, especially during the years of the economic crisis in Greece. During the financial crisis in 2015, miners mobilized against the Greek government, which was skeptical of mining. A miner stated, "*Our grandfathers were miners; our fathers were miners, and our destiny is to be miners. It is our only option for survival*

in our villages. Our only alternative would be to migrate" (Interview A in Velegrakis, 2015). In other words, the miner's identity is so strong and influential that it defines many aspects of people's daily lives, including their commoning activities. Generation after generation takes care of a working-class tradition by reproducing the identity of the miner and the household provider. This example shows that mining companies have created an intra-generational dependency on mining for many in the local community. In response to that, people perform and maintain the mining tradition through the practices of collective care that allow the nourishment of their local communities.

5.3.2   Support for Pro-Mining Commoning Practices

The economic and social security that mining provides for a large section of the local population of Aristotle Municipality is vital in supporting commoning practices among miners. For example, miners' salaries, and the working benefits provided by mining companies, support children's education. This also allows miners' partners to have more free time to care for themselves and their children. In addition to that, it encourages miners and their families to actively participate, through commoning practices, in improving the living standards of their local communities. Mining communities are disproportionately wealthy and well-organized in contrast to the non-mining ones. My study participants explained to me that Stratoni, pictured in Figure 5.8, has been the cultural centre of the mining community since the '50s (Velegrakis, 2015). Consequently, Stratoni village became the centre of commoning assemblages in the form of theatrical events, painting exhibitions, the local music band, and many more cultural events (The Greek Travel Guide, 2020).

Figure 5.8

Aerial View of Stratoni Village, Aristotle Municipality

Image has been removed as it contains copyright material.

Source: http://www.dimosaristoteli.gr/gr/villages/straton
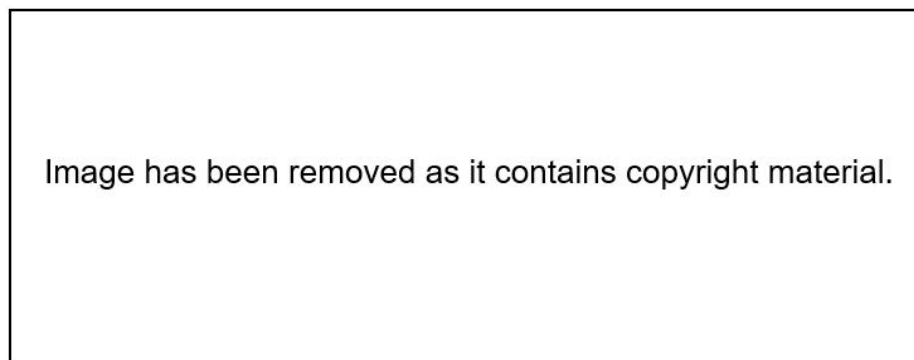
For miners' commoning activities to flourish, funding and a diversity of resources are required. Miners' commoning activities have continuously received support from the mining companies operating in the space around Skouries. That is reflected in the words of people from the non-mining villages. As a participant from Ierissos village noticed, "*Most of the economic and infrastructural focus orients towards the mining villages. Here [Ierissos], public authorities kept us purposely undeveloped*" (Interview GV, December 4, 2019). The participant's argument refers to the past efforts of local authorities in promoting a particular type of development through mining. As alluded to earlier, Greek governments and local authorities consciously distribute more resources to the mining villages to reward the mining community and indirectly force the rest to either follow suit or accept mining as the dominant mode of development for the area. This political strategy has also been supported by the mining companies, which have tried to fund social projects in the non-mining villages in order to win over these communities. For example, in 2011, local authorities funded many social projects in Ierissos, like the beach stairs and the renovation of the local nursery school, to win over the anti-mining community.

Unlike the mining communities, the anti-mining ones have rejected funding from the current mining company. As people from the anti-mining community have argued, "*Accepting the company's funding will mean that we contribute to the destruction of our environment, and we will endanger the future of our kids. Enough is enough*" (Focus Group 2, May 3, 2019). There is a qualitative difference between the commoning practices of the anti-mining community and the mining one. The anti-mining community have been trying to resist the appropriation of a public space and the environment from the mining company, while pro-mining commoning activities have been oriented towards maintaining their jobs despite the cost to the public space and the environment. Upon this contrast, meaning environmental protection versus job security, the whole Skouries narrative has been constructed (Hovardas, 2020).

5.3.3   Miner's Christmas Village

A highly visible example of commoning in the mining community is the construction of a Christmas Village in Stratoni. The Christmas Village was constructed through volunteer work from the mining community. The purpose of its construction was to bring joy, teach local traditions, and educate the children about the benefits to the local community from mining (Dousis, 2017). It was also a way for the mining company to build good personal relations by showing its social responsibility and by creating better connections with the non-mining population. Funding local projects is a standard strategy mining companies use to increase their acceptance amongst the local population (E. Wall & Pelon, 2011). Mainstream media also

contributed towards the building of the image of Stratoni's Christmas Village as a collective effort of care with significant positive effects for the local community (Dousis, 2017). Figure 5.9 shows one of the celebratory Christmas Village cottages in Stratoni.

Figure 5.9

Stratoni's Christmas Village

Image has been removed as it contains copyright material.

Source: https://en.protothema.gr/10-christmas-villages-from-around-greece-pics/

As members of the anti-mining community in Ierissos who assembled and maintained a similar Christmas Village in Ierissos pointed out:

> *We have been working without the help of anyone. Only volunteer work, our enormous enthusiasm, and the crowdfunding support from sympathizers to our cause, helped us construct the Christmas Village in Ierissos. But that is not enough. Year after year, we got tired; the Christmas Village is not the same as it was during the first years.* (Focus Group 3, May 25, 2019)

From what my study participant has noted, I understand that with volunteering and crowdfunding support alone it is difficult to sustain commoning practices over long periods of time. This is in contrast to the support provided by the mining company and the encouragement received from

state authorities that have helped to sustain the Stratoni Christmas Village, which continues every winter.

Volunteering and collective care activities can bring joy and the spirit of collective engagement (Dousis, 2017). Volunteering in the Ierissos village builds feelings of solidarity amongst the participants in the commoning assemblage, as participants explained, "*The joy and happiness we have when we help each other for a common cause is something indescribable. We learned a lot from working together with people we did not know before*" (Focus Group 2, May 3, 2019). The solidarity built through practices of collective care strengthens the ties between community members and challenges norms and identities (Mcdowell, 2004; Morrow & Parker, 2020). Yet, the funding and extensive support from private institutions for the development of social activities in the mining communities plays a vital role in how the different commoning assemblages progress.

For years the Christmas Village in Stratoni was performed, cared for, and maintained by local volunteers, especially the miners and their families. Their volunteer work and care for the local mining community played an essential role in assembling and performing Christmas events and maintaining the festive village. Yet, the economic support from the mining company, including that received from other private sponsors and public officials (Dousis, 2017), provided the grounds for maintaining the Christmas Village in Stratoni in excellent condition for a significant duration of time. What I have noticed is an interdependence between different commoning assemblages, as well as different institutions, both state and market, that provide commoning with resources capable of supporting its maintenance. The downside, however, is how these commoning assemblages support less-communal institutions. This example of commoning shows how forms of care that are not directly preoccupied with a drive for economic growth, and are instead performed to support children and celebration, can play an important role in supporting an assemblage that ultimately contributes negatively to the Anthropocene.

5.3.4   Mining Conflicts

Megali Panagia is a village populated by miners, farmers, and beekeepers. As a participant from Megali Panagia noticed, "*Here, we have a big problem. Families got separated, and brothers got mad with each other; families divided. We experienced a situation like the one during the Civil War*" (Interview GD, November 27, 2019). The comment refers to the clash of interests between members of the local community in Megali Panagia, including between members of the same family. During the years between 2011 and 2019, hostility developed in Megali Panagia amongst

those who depended on mining and those whose livelihood would be destroyed by it, like farmers and beekeepers (Calvário et al., 2017; Velegrakis, 2015).

In 2015, the miners' community from Megali Panagia occupied the local town hall to protest against the anti-mining government's plans. For almost a week, the mining community would not allow the newly elected local officials to go to their work at the local town hall (Mega TV, 2015). This protest was supported by national political parties in Greece as well as the High Court, which rejected the anti-mining government's efforts to shut down the mines until further clarifications about the mining operation were given. This was motivated by the mining community's drive to protect, care for, and maintain the mining jobs in the municipality. Political parties in favour of mining, including conservatives, social democrats, and the Communist Party in Greece, supported the miners against the new local and national authorities, each party for its own political reasons (Katiousa, 2018; Oikonomou, 2016; Proto Thema, 2015). That led to a substantial upheaval between the miners of Megali Panagia and the anti-mining group of the village. As one of my study participants pointed out in 2019, "*Some of us still do not talk to our family members that support the mining operation*" (Interview GD, November 27, 2019). As a result, the local community in Megali Panagia has been ruptured.

To protect the mining lifestyle against the interests of the anti-mining community, miners conducted pro-mining demonstrations. One of the slogans that miners used in their protests to show the importance of mining to their lives was: "*First work, then health*" (Avgeropoulos, 2012; Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019). Work became the central priority for many in the municipality, since mining families have depended on private mining companies for decades. As explained earlier, mining companies have become associated with development and progress, taking on many of the roles of the State. Resources provided by Eldorado Gold, Ellinikos Xryssos, and Greek governments have facilitated the ability of the miners to mobilize and maintain their mobilization for prolonged periods. As a participant and anti-mining community member remembered, "*We marched for our [anti-mining] demonstration on the mountain. Suddenly we see the miners and the police that were hidden inside the forest. Around them, we also spotted right-wing militias that tried to disturb our protest*" (Focus Group 1, March 13, 2019). The participant's observation emphasizes the different levels of support for commoning activities between the anti-mining community and the mining one. On the one hand, the miners' mobilization and commoning activities, such as their demonstration, were supported by official institutions and groups that support this kind of development. These institutions have a remarkable ability to utilize resources, economic and infrastructural. But, on the other hand, the anti-mining community was based on civil mobilization and a network of sympathizers, mostly social

movements and individuals friendly to the anti-mining struggle. As was the case with the Christmas Villages, the relations that extend out from commoning practices towards supportive actors have a strong influence on the ability to sustain commons activities such as protests.

5.3.5   Commoning to Make Technoscientific Solutions Flourish

The experience of Eldorado Gold has proven to the company that technoscientific interventions can be successful when there is also some kind of community acceptance and participation with them. Eldorado Gold aims to utilize commoning practices with people from the local community willing to contribute to the mining company's rehabilitation plan (Eldorado Gold, 2014a, 2014b). For that reason, as it did in the past in other mining spaces in Aristotle Municipality, the company plans to fund large-scale projects of plant repopulation by reusing waters that have been used in the operation phase (Eldorado Gold, 2014a). The company has already tested some of these strategies in other mining villages in the municipality, such as the municipal village, Olympia. In these cases, local volunteers have been taking care of plants and trees in large-scale organized agricultural areas. These crops are stored in facilities that the mining company has provided. As a result, the landscape in these mining villages appears nothing like the pre-mining period as shown previously in Figures 5.5, 5.6, and 5.7 in section 5.2.2.3. Plants, trees, and facilities are now spaces positioned in an orderly manner, keeping their distance from spaces arranged for different large-scale developmental projects.

Commoning practices such as volunteering, and the forms of knowledge generated through them, play an essential role in maintaining large-scale rehabilitation projects. As officials from Eldorado Gold have argued, community commitment and education towards engaging with big technoscientific projects are a crucial element in tackling the environmental problems produced during mining operations (Eldorado Gold, 2014a, 2014b). Moreover, it is the mining community's commitment and their commoning practices that have helped confirm the company's image as one of caring about the social and environmental aspects of the space they occupy. If people had ignored these technoscientific projects, it would have been presented as the mining company's failure to convince people about its ability to restore diversity in mining spaces. In other words, it is the commoning assemblage and its collective practices of care that put into action and give life to the rehabilitation phase and, in that sense, perpetuate the problems produced by assemblages that are preoccupied with economic growth.

Conclusion

Anthropologist Anna Tsing and colleagues have eloquently argued that,

> We have made a world of continuous disturbance where bulldozers are beacons to young boys, as symbols of pleasure and power, and native ecologies are wasted, underdeveloped spaces calling out to entrepreneurs. (Tsing et al., 2017, p. 22)

The mining assemblage manages to connect different agents from different scales together in occupying and constructing the mining space in Skouries. Following Tsing et al.'s way of thinking, the Skouries mining assemblage is smoothening space, discarding native ecologies including trees and waters, by violently and continuously removing them. Having economic growth as their primary driver, these assemblages prioritize a particular image of space and time that serves only economic growth. The commoning practices that support the mining assemblage provide the conditions for generating support and minimizing opposition. They also vilify anti-mining commoning activities, which are deemed disturbing to the mining operation.

All the observations above guide me to my chapter's main argument: that the mining assemblage's efforts to establish mining space leads to the minimizing of spatio-temporal diversity and resilience, which, as many studies confirm, are fundamental for mitigating the negative effects of the Anthropocene epoch (Duchek et al., 2020; Grêt-Regamey et al., 2019; McKay, 2009; Subsidiary Body on Scientific, Technical and Technological Advice, 2012). This is an assemblage driven by a closed ontological system in which the only way to progress is through the accumulation of economic growth. That is why any relations considered important are those that serve the purpose of large-scale mining. The assemblage around mining in Skouries is one that brings together the heavy machinery, miners, institutions, laws, and an artificially constructed space that make large-scale mining possible. It also brings together commoning activities, legal processes, and technoscientific solutions. All the different agents and agencies that synthesize the mining assemblage focus on producing a smooth and accelerating spatio-temporal environment that will fulfill the needs of gold mining for the next 25 years. In this plan, the trees, the underground waters, the animals, the plants, all the surrounding soil communities, and any disturbing activities that accompany them, are set for removal.

The pro-mining commoning activities, together with the strategies and technological advancements, also play an important role in establishing and maintaining the mining assemblage in the municipality. They encourage the smoothening of Skouries socio-cultural and political

spaces for the development of the mining monoculture. However, the mining assemblage is not absolute, and ruptures and bumps are occurring in this smoothening process. In the next chapter, I explore how the anti-mining community's commoning practices challenge the smoothness of socio-material relations in space and time.

Chapter 6:
Commoning Politics and Livelihood Assemblages

The goal of this chapter is to understand how small-scale commoning assemblages are affected by the prospect of, and how they respond to, the large-scale mining operation in Skouries in Halkidiki, Greece. Particularly, this chapter focuses on exploring those commoning assemblages that do not necessarily openly contest the mining assemblage. The commoning assemblages in this chapter have a focus on livelihood activities that are threatened by the imposition of the large-scale mining. I refer to these as *livelihood assemblages*. I classify livelihood assemblages as *caring with*, because, under specific conditions, they can pose a political threat to the dominant mode of being and producing that is driven by the pursuit of an endless accumulation of economic growth. While each of these livelihood assemblages is unique, people may flow between, or be involved in more than one assemblage.

In this chapter, I present three different livelihood assemblages: the nursery school, the women's collective and the bicycle store. In each, I explore how social and material relations are affected spatially and temporally by mining activities, and how these assemblages are responding back. The goal is to explore how commoning assemblages can contribute differently to the ideas around responding to and living within the Anthropocene epoch (Gibson-Graham et al., 2016). By 'differently', I mean responses that cultivate an ethos that is not primarily driven by cumulative economic growth. Inspired by Joan Tronto's (1993, 2013) five stages of care, in this chapter I explore three commoning assemblages that fit into the scholar's description of the fifth stage of care, that of *caring with*. *Caring with* refers to specific practices of collective care that are not only attentive to the needs and temporal rhythms of socio-material relations across space, but that also challenge the value system that prioritizes economic growth above the environment, health, and solidarity. In the final section, I bring the three livelihood assemblages into a dialogue that traces commonalities and differences and their potential contribution to Anthropocene discussions.

The choice of case studies is based on the narratives expressed by my research participants. They set the agenda, and they provided me with the data. My goal was to make sense of their everyday stories in a way that, I believe, sheds light on some aspects of their struggle that have not been presented before. Through my description and analysis, I aspire to show a tiny fraction of the complexity of relations, how and why they are established, the reason behind different

assemblages' purpose, and how each is maintained in space and time. To make the discussion more vibrant, at the end of each section on an assemblage I have mapped out the primary agents and agencies that define the character of each assemblage, spatially, socio-materially, and temporally.

6.1 Livelihood Commoning

In what follows, I examine each of the three livelihood assemblages and their unique characteristics and relations. I aim to reveal the diversity of relations that comprise different assemblages and how they are threatened by the mining project.

6.1.1 Chamomile and Bees

One day, I went to collect wild chamomile on Kakavos Mountain near Skouries gold mine. Then an old lady saw me and told me: "Stop! You are hurting them!" I did not know how to respond to that… The old lady then explained to me: "You know, there is a special way that you need to cut the root of the flower. But before that, you must sing to it and inform it that its life is precious. You have to show that you care for it. (Interview ANI, March 4, 2019)

My study participant explained how a small-scale commoning assemblage has formed around chamomile, which, due to its status as an agent endowed with personality, agency, and subjectivity, deserves to be treated with care. This assemblage involves people who use the healing botanical properties of chamomile in a place where public healthcare has not been widely available or easily accessible. The old lady engages with botanical life to remedy some basic inflammatory conditions. In return for her care, the chamomile offers its healing and therapeutic properties. Moreover, plants like chamomile have enabled people to develop local knowledges that the modern pharmaceutical industry seems to have only recently tried to utilize (Petrovska, 2012). The fertile mineral soil of Kakavos Mountain has been an ideal ground for collecting medicinal plants such as chamomile.

Forest chamomile plays a significant role in the culture of the local community. The blossoming of chamomile is a sign of spring. It is related to the beginning of vibrant soil activity and the regeneration of life. The material liveliness and agency of chamomile is a force towards flourishing local social relations. The image of green fields filled with chamomile spurred the birth of spring festivals whose purpose is to welcome the coming of spring. The woman knows by heart

and through intergenerational processes of care – which she has passed on to the participant of my study – that the chamomile needs to be treated as an agent with its own subjectivity. Neera Singh (2013, 2018) noticed similarly, in her study of how trees respond to affective labour, how daily practices of collective care transform participants' identities and subjectivities. Recognizing forest chamomile as an agent with subjectivity creates the conditions for a respectful relationship between the participants of the commoning assemblage (see Figure 6.1).

Figure 6.1

Chamomile on the foothills of Kakavos Mountain in spring

Source: Author

Forest chamomile grows on the foothills of Kakavos Mountain, just below Skouries gold mine. One of its fundamental characteristics is that, once planted, it has a remarkable ability to spread across space (Nature & Garden, 2020). It can flourish in places with harsh conditions and with a scarcity of resources. While the particular species is durable and survives with very little, it still depends on a system of underground irrigation (O. Singh et al., 2011) and soil minerals, which Kakavos can still provide at the moment. Overall, this small-scale assemblage brings together, in one specific space, different generations of humans, the chamomile rooted in Skouries soil, the rich minerals in the ground, and the underground water that delivers the minerals, all of which support the flourishment of the chamomile.

In Ierissos, forest chamomile is commoned by a community that harvests and tends to the chamomile every spring and beginning of summer. A chamomile collector must wait for spring and summer before harvesting the plant. This anticipation gives space and time for this non-human species to flourish. For centuries people knew how to be attentive and caring of the needs of the plant. Forest chamomile requires special attention and care in order to grow every year. For example, one must use only special tools to cut the parts required for medical, economic, cultural, or brewing purposes, and one must try not to uproot the whole plant. The remaining plant will continue its reproductive cycle to flourish during the next spring (Nature & Garden, 2020; Super Everything, 2017). As Participant AN noticed, "*It is part of our culture; older people knew by heart how long they had to wait and how to treat the chamomile for it to give back to them what it has to give*" (Interview AN, November 28, 2019). The chamomile commons community is comprised of old farmers and plant collectors, the chamomile, the water, the soil minerals, special cutting tools, and techniques that sustain a local economy and livelihood.

The maintenance and flourishment of the chamomile's assemblage are both spatially and temporally threatened by the mining assemblage. The chamomile depends on the underground waters of Kakavos Mountain. This dependency creates a tension with the purposes of the mining assemblage. As described in Chapter 5, the large-scale mining operation cannot proceed smoothly without removing the underground waters of Kakavos Mountain. That process, however, will put chamomile's viability under serious threat. Under this light, the chamomile, mountain waters, and the people depending on its harvest, are positioned in antagonism to the mining assemblage's purposes.

What is at stake here is not only the relationship of the chamomile with the underground mountain waters, but many other lively connections maintained by the underground waters. Due to the mining process, agents like the chamomile on Kakavos Mountain and the agencies around it will not survive if the mining assemblage goes into full operation. As pointed out in the discussion about trees in the previous chapter, the smoothened space in Skouries is arranged only to serve the mining monoculture. That means eradicating all lively connections that could disturb the mining operation during the 25 years of the extractive process. The spatial and temporal consequences for the chamomile assemblage will be the abrupt eradication of its reproductive cycle and its relation to other agents and agencies around it.

The reason for recognizing this set of socio-material relations as a commoning assemblage is because the relations between humans and the non-human elements of the example are constituted upon practices of collective care. But there is more to it. While I categorize it as a

livelihood assemblage, it has a political dimension vis-à-vis the mining assemblage. The present and future threats that the large-scale mining assemblage pose to the existence and maintenance of the chamomile assemblage make its participants a potential force that could challenge the mining assemblage. What I mean by that is that, once the very material substance of the relations that tie the agents of the assemblage together start fraying as a result of the operation of the mining assemblage, they may mobilize in order to survive. On the one hand, the instinct of survival might be a powerful motivator, yet, without a political expression, it can have a very limited effect. A way of understanding the politicization of a livelihood assemblage is, for example, their capacity to communicate with commoning assemblages that openly aim to contest the mining assemblage. Indeed, many people working in various livelihood commoning assemblages have contributed in different ways to the anti-mining struggle. In that sense, through building a network between commoning assemblages, a proactive and many times defensive action driven by survival instincts could find new ways of expression and creative energies. This political potentiality is why I present livelihood commoning assemblages as a political force for potential change, and why I present their caring capacity as *caring with*.

6.1.1.1 Bee-Chamomile Assemblages.

After the discussion with the old lady, Participant AN became aware that the chamomile's wellbeing depends upon so many different vibrant relations. Besides its medicinal properties (O. Singh et al., 2011) having been appreciated by humans for centuries (Gupta et al., 2010), chamomile also attracts pollinators such as bees. Bees expand the assemblage to include trees, pollinators, insects, the air, and an economy designed around the production of honey by local beekeepers. Bees are one of the most important species in the Halkidiki Peninsula. Every spring and at the beginning of summer, several thousand bees migrate from their old hives to produce a new colony, leaving behind the old queen. Bees seek a tree branch that fulfills the necessary conditions for hosting the new hive and linger there for a few hours every day. Scouting bees seek to convince the bee collective about the best possible location for the new hive, with the collective taking the final decision (Seeley, 2010). Once they establish the new colony, bees use their distinct ability to find their way to plants like the chamomile, trees like oak and pine, and then back to their hive. The bees manage to find their way by following the aromatic air pathways they collectively establish (Honeybee Monitoring, 2015).

The forest in Skouries is one of the locations where bees emigrate every spring and summer. The conditions until now have been ideal for the bees to create their hives. For them, spring and early summer are the time to start their collective caring activities. This includes rearing the younger members, building, maintaining, and protecting the hive, and searching for food (Vaidyanathan, 2020). When time and place are appropriate, the bees start looking for plants like

the chamomile, and trees like oaks and pines, to extract pollen, nectar, and honeydew. Beekeepers in Megali Panagia village have argued that "*the honey produced in Halkidiki, including Skouries, is the best in the whole world*" (Interview GKA, May 22, 2019). The quality of Halkidiki Peninsula's honey is globally recognized and awarded (Meynen & Poulimeni, 2016). That makes honey one of the products that Aristotle's municipal economy invests in and depends upon (Meynen, 2019).

This example describes a small-scale commoning assemblage that brings together a diversity of agents and agencies, such as plants, humans, bees, waters, honey, beekeepers and the honey industry. This entanglement is both spatial and temporal, underscoring how different agents depend on secure and healthy conditions that give them the ability to flourish in a particular space and in their own unique time frames. The glue that holds these socio-material relations together is *caring with*. Both the chamomile and the bees are treated as participants with their own unique subjectivities, material needs, and temporalities. In exchange for homes and environments, they provide various products, including honey, to the human participants of the assemblage.

While the chamomile-and-bee assemblages are interconnected and spatially and temporally marked around Skouries, their scale of influence reaches outside the boundaries of Skouries. Through their activities and biophysical processes, chamomile, bees, and humans produce and transfer knowledge. They also produce honey and medicinal chamomile that is transferred outside the local community. However, what characterizes the scale of influence is the quality of relations constructed in the locality around Skouries. For example, the honey and the chamomile tea made in Skouries are exported to local markets and presented as ethically produced products (Interview ML, May 19, 2019). Buying honey or chamomile produced in Skouries is positioned as an affirmative action. This kind of ethical orientation contributes towards the maintenance and development of the local economy, the maintenance of relations amongst the members of this assemblage, and it tackles climate-related problems spurred by other production models and consumption (Hunt, 2018).

The mining assemblage is threatening many of the agents and agencies of this entanglement. The breaking of the links between the members of this small-scale commoning assemblage can lead to various predictable and unpredictable disastrous results for humans, bees and plants around Skouries. Their existence comes into conflict with the logic of the mining assemblage. Keeping in mind what I have presented in the previous chapter, agents like the chamomile, the bees, the groundwaters, and other lively connections are perceived as one more obstacle to the smooth operation of the mining process. Therefore, the large-scale mining

assemblage agents need to remove and/or deprive chamomile-bee assemblages of the relations that sustain them. In Figure 6.2, I present how some of the main actors and relations surround and contribute to the chamomile-bee assemblage. This presents only a fraction of the agents and agencies that come together, but provides a visual depiction of the discussion above.

Figure 6.2

Chamomile-Bee Livelihood Assemblage
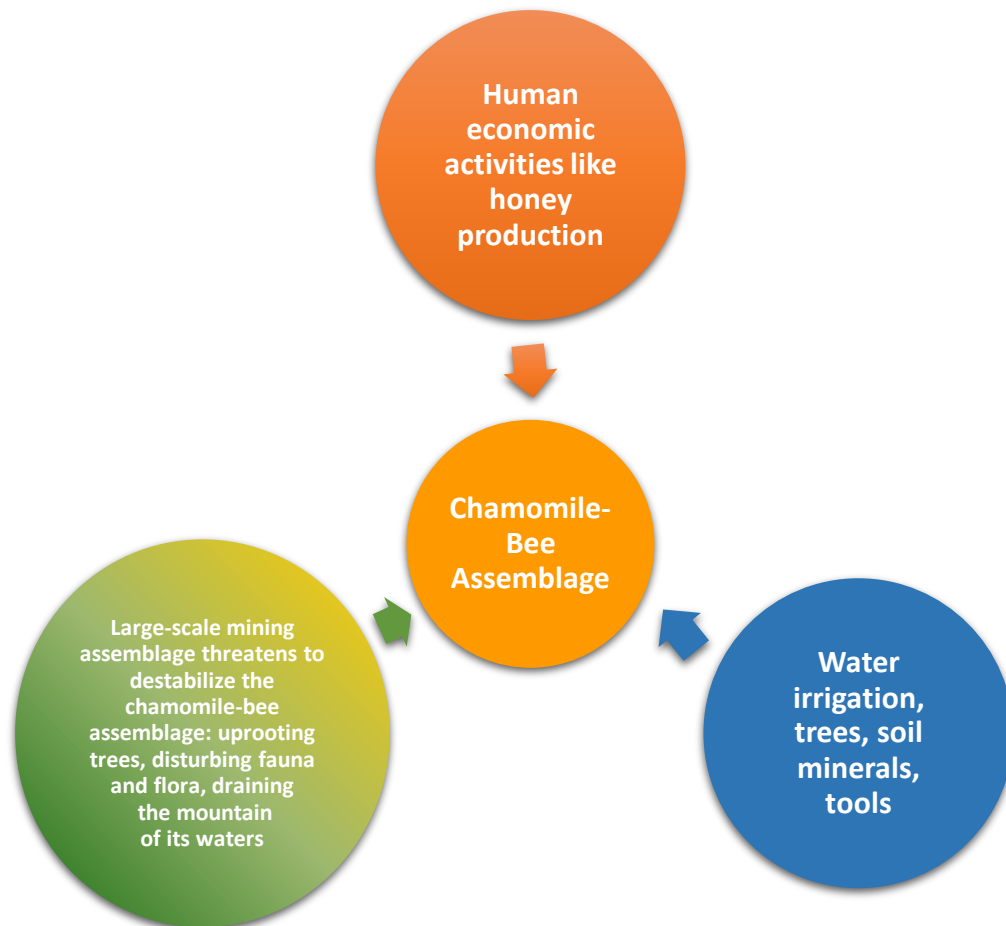
Source: Author

6.1.2   The Women's Collective

In the small villages of Greece, like the ones in my case study, men are the ones who dominate economic activities. However, the anti-mining struggle around Skouries gave birth to something unexpected for the small society of Ierissos village. A group of women in their 40s, who previously had been primarily involved in household caregiving, decided to create a small-scale collective to promote products from the local community. The plan was simple. A few sweet and salty pies made with local products, like strawberries, apples, and cheese produced by local producers and farmers. The beginning of the collective was not easy. As one of the participants

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explained, "*I thought that [Participant AN] was an ignorant middle-class lady. I got to know her better through our collective activities. I appreciated her willpower to contribute to the common struggle against mining*" (Interview ML, May 19, 2019). Practices of collective care, such as preparing food for the anti-mining community, volunteering for the organization of anti-mining events, and participating in demonstrations, made this group of women realize that they could do something that would "*satisfy our ambition to do what we knew to do: to cook, and to promote the products of our land, which is now threatened due to large-scale mining*" (Focus Group 1, March 13, 2019). *Caring with* has brought people from diverse backgrounds closer, challenged stereotypes, and forged new relationships between people who, in some cases, did not like each other in the first place. The formation of collective identities through challenging previous ones is a common phenomenon in commons struggles across the world (Felstead et al., 2019; Fotaki & Daskalaki, 2020; Nightingale, 2019; Velicu & García-López, 2018). As one of the participants of the collective pointed out, "*We wanted to provide an alternative to the mining option. We wanted to show that many of our products [would] disappear if the large-scale mining operation started*" (Interview ML, May 19, 2019). Under this light, all these new relationships that the women's collective created are a product of care for achieving a common goal – exploring alternatives to mining.

Unlike a business that is preoccupied with the need for perpetual economic growth, the women's collective presents a model of production that challenges the logic of material affluence. Focusing predominately on local production is a manifestation of attentiveness towards the spatio-temporal conditions that allow different local products to flourish. It is thus proving a challenging model of production to the one offered by the large-scale mining assemblage. For the people of the anti-mining community, economic growth and employment could be achieved in ways that spatially and temporally sustain a long-term relationship with the socio-material conditions of their land. Their developmental visions are not limited to a 25-year lifespan; instead, they depend on an intergenerational continuation of sustainable production without the devastating effects of mining.

One of the first problems the women of the collective encountered was the problem of finding physical premises to house their activities. As the participants of the collective pointed out:

> *With the assistance of professors of management from the Aristotle University of Thessaloniki, we managed to find a space to set up the collective. There, each one*

> *of us could now contribute with both baking goods and the production of traditional*
> *sweets and pastries made from local fruits.* (Focus Group 1, March 3, 2019)

Firstly, in order to start operating, the premises had to be fitted with all the professional technical baking equipment and machinery, such as ovens, cake and bread tins, mixers, processors, measuring spoons and jugs, pastry brushes, and mixing bowls. Secondly, the premises required electricity, clean water, and the good sanitation that clean water can secure. Assembling the different equipment in a particular space required care, labour, and commitment from the collective members. The women of the collective said, "*We had to deal with bureaucracies to get access to water and electricity, then we had to test the equipment, and through a process of trial and error we learnt how to work more efficiently*" (Focus Group 1, March 3, 2019). As some of my participants observed, "*Once we found the appropriate space, we started setting up the equipment. It took us some time to figure out everything, but now we are experts in what we do*" (Focus Group 2, December 3, 2019).

In addition to the technical equipment, the collective needed flour and yeast, cheese and fruit. They acquired the first two ingredients from a variety of different markets, choosing to use multiple sources for their yeast and flour because these materials are the basis of production, and access to them is vital for productivity all year round. The dough used to make a pie would have to be used through all seasons in producing a variety of pastries. In contrast to that, choosing to operate with locally grown fruit would mean developing a dependency on the seasonality of the fruit. As my informants pointed out: "*We came in contact with a network of local farmers to get access to products like cheese and seasonal fruit*" (Focus Group 2, December 3, 2019). The women's collective decided to promote local products and materials because they wanted to show that the land has productive capacities that can challenge gold mining.

It is important to point out here that local productivity is based on the diversity of different temporal cycles. For example, seasonal fruit depends on different soil temporalities (Puig de la Bellacasa, 2015, 2017). Different soil temporalities refer to the diversity of seasonal rhythms different fruit need to flourish, for the harvest season for strawberries (spring-summer) differs from the season you harvest apples (autumn-winter). Since the women's collective uses local strawberries and apples to produce products like marmalade, strawberry jam, and apple pies, their production line depends on the seasonal rhythms of these fruits (see an example of seasonal produce in the following Figure 6.3). In other words, there is a direct line of dependency on the seasonal flourishing of fruit, the women's collective's production, and the character and

orientation of this commoning assemblage. The maintenance of this small-scale assemblage depends on the reproduction of specific socio-material relations across space and time.

Figure 6.3

The Women's Collective's Handmade Organic Winter Marmalade made from Pumpkin, Apple, Ginger, and Orange

Image has been removed as it contains copyright material.

Source: https://www.facebook.com/aristoteleiaGH

A second element of the discussion above concerns contingency. There is always a certain level of unpredictability regarding the collection and usability of the local fruit, with the potential of pests, floods, or heatwaves damaging or destroying crops. The local women's collective needs to be versatile and adaptable in responding to potential disruptions to their food supply. There could even be cases where the destruction of a particular crop may lead to a radical shift in the production plan and create new dependencies that could progressively change the assemblage's

character. For example, an extensive loss of local crops could force the reorientation of the product line towards imported fruit. That, however, may mean a temporal shift in the collective's character, since it would make it unable to support the argument for promoting an alternative model of development that puts local products in the centre of production.

While unpredictable events could destroy crops and disorganize the planning of the collective, the most critical destruction, according to one of the women of the collective, is that "*the [mining] company sentences us to a life with no income, deprives us of our ability to show a different image of our land through our local products. It actually forces us to migrate*" (Focus Group 1, March 13, 2019). Resistance to an enforced and unavoidable exodus from their land became another fundamental argument of the anti-mining struggle (Hovardas, 2020). The reason is that, without the means that maintain local social and economic activities, it would seem impossible for the non-mining-dependent population to remain in their villages. By asserting this argument, the anti-mining community wanted to point out to the municipality the inseparable entanglement of livelihood activities with the very existence and survival of the local community.

However, the maintenance of this commoning assemblage also requires capital. This means that the commoning assemblage and its maintenance depends on the production of surplus value. The women who run the collective invest time, effort, and capital in producing the different delicacies they sell. To maintain their families, a business without surplus value would not be a sustainable option. Consequently, with the growth of the collective's reputation, the balance between collective care and economic growth shifts through time. As one of my participants noticed, "*We started the collective to prove that we do not have to depend on mining. Nowadays, our economic prosperity secures that we can continue proving that we are a prosperous alternative*" (Interview ML, May 19, 2019). The women in the collective have needed to orient their collective energies towards a particular level of economic growth to maintain their investment. What I notice in this commoning assemblage is that what Gibson-Graham et al. (2013) have referred to as the 'surplus' generated within such assemblages is vital for the maintenance of livelihoods. That said, it does not necessarily mean that the collective is turning into a private business preoccupied with accumulating economic growth for the sake of growth. Instead, it means that economic growth, in the form of surplus that is not oriented to limitless accumulation of economic priorities and values, can play a fundamental role in maintaining the prosperous development of commoning assemblages such as this one.

In addition to the previous point, there is also a dimension regarding reshaping identities. As one of my participants said, "*The women that founded the collective were previously only*

household caregivers. The anti-mining struggle changed them, as well as the relations between many people in our small community" (Interview ATH, June 1, 2019). In other words, gold mining has ignited a process of collective identity transformation. What happened in Ierissos with the women's collective has been noticed in other case studies. For example, the feminist philosopher Silvia Federici (2011a) has noticed, from her empirical experience in Africa, that in many different social contexts, women develop a different relationship to land and environment than men do, due to the structure of their societies. In many different contexts, societies attribute to women the role of caregivers for the family, the community, and the land. Despite the patriarchal, sexist, and oppressive character this role can embody, it also allows them to develop caring subjectivities that are entangled with the world they become responsible for. Similarly, the women's collective in Ierissos became a vehicle for constructing new identities that transformed the household caregiver into a caregiver for the community, and promoted an alternative economy based on local goods produced through *caring with*. By applying forms of care attained in their households, women enriched the anti-mining struggle with new collective-caring experiences and forms of knowledge. The result of this transition of identities from the household to the community was for many women to challenge the patriarchal standards of the local community, which had encouraged women to be household caregivers exclusively. From then on, these women became owners of their own business, challenging the anachronistic rationale that a business is a man's territory.

One of my interviewees confirmed that the women's collective has helped many to challenge the perception about women and to break patriarchal stereotypes. The women's collective "*allowed many women to reconsider their position in the society, and break some patriarchal stereotypes*" (Interview SP, December 11, 2019). Women were positioned at the forefront of building alternative relations within the society. For example, their practices of collective care enabled and facilitated collective protest against the mining assemblage and the pro-mining authorities. Protests had to be planned; people needed to be housed and fed. Furthermore, protest discussions took place in all sorts of homes and buildings (Horton &Kraftl, 2009). Within these spaces, it was the women who prepared the food, carried and distributed water, provided medicine and gas masks to the protesters to protect them from the tear gas thrown by the police. As one of the participants pointed out, "*At some point, women [were] arguing with each other about who [was] going to host the solidarity movement members that came to support our struggle*" (Interview RI, March 13, 2019). All these small and insignificant things that we many times overlook are essential processes that enable successful commoning assemblages – including protest activities.

To put it in perspective, all this new knowledge produced within a particular facility, that of the women's collective, does not remain only within the narrow limits of the space. The women in this example transfer their knowledge and skills to other assemblages through collective-care practices. Illustrations of this are the nursery school, participation in demonstrations, and the Christmas Village in Ierissos. Therefore, the space where the different relations develop, meaning the women's collective's physical location, does not limit the forms of *caring with* generated. Instead, the participants of one assemblage transfer their identities and knowledge forms to the myriad of other interactions they create with the world beyond the assemblage. That insight points to the fact that commons are relational and vibrant assemblages that can develop at any given time, in all kinds of different circumstances, supporting and transferring elements of knowledge to one another.

This commoning assemblage shows the crucially important role of women in the anti-mining struggle. For many, it has challenged the perception about the role of women in the local community and the economy of the village (Fotaki & Daskalaki, 2020). Through their struggle against gold extraction, many women realized that they could apply public forms of the knowledge and collective care they had acquired as household caregivers (Papada, 2014). Not only did these women realize that they had great collective power and knowledge to apply in the public domain, but they also managed to channel it into an institution that gave them economic power, new meanings and identities for themselves and their local community. The women's collective is a grounded example of *commoning-as-caring-with*, which also projects how production, based on small-scale local materialities, can be attentive to the spatio-temporal variances of the agents used in the production process. This approach differs from models that treat the environment and non-human agents as infinitely replaceable resources in the service of endless economic growth.

Figure 6.4 displays some of the different relations that emerged from, and that threaten, the women's collective.

Figure 6.4

The Women's Collective Livelihood Assemblage

Source: Author

6.1.3   The Bicycle Store

The bicycle assemblage is one of the commoning examples I became familiar with by asking my study participants whether they knew of any initiatives that aimed to change the environmental habits of the local community. When I first went to Ierissos for fieldwork research, I already had some information about someone who had started a local initiative to raise awareness about the local environment. This initiative included a participant who had a bicycle shop close to the Ierissos seafront. I introduced myself to him, and we started chatting. Participant PE's job was impressive and made me curious to know what was exceptional about cycling in Ierissos, and how this commoning activity had anything to do with the environment and the anti-mining struggle

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around Skouries. He had created a small-scale commoning assemblage that had become very popular amongst the young population of the local community in recent years. His goal was to bring people, especially local youngsters, closer to their surrounding physical environment of Skouries Forest.

I consider the bicycle store to be a commoning assemblage because of its purpose. It is an assemblage with educative character. It was created through the love of one of the participants for raising awareness about the importance and the beauty of the local nature. PE wanted to raise "*awareness about how the mining assemblage threatens the local environment, but also to show that the environment can be promoted as an asset to the community's development*" (Interview PE, May 19, 2019). It is this aspiration and his care for teaching people about the surrounding environment that brought the bicycle assemblage to life. However, it is the collective care of the community that maintains it through space and time. The educational dimension brings a political element into play. Educating people about the importance of Nature for their wellbeing and their community, together with collective engagement, can operate as a mechanism for creating new connections of dependency between humans and the environment. This new connection can then pose a potential challenge to assemblages that threaten its sustainability. We could say that the enclosure, or the fear of destruction, of the lively connections between humans and the local environment, creates a potential for resistance, as long as there is awareness that these connections are vital to the sustainability and wellbeing of the local community. Therefore, I have characterized this assemblage as a commoning assemblage with political potential.

PE's first professional foray into cycling was related to summer tourism. "*In the beginning, I bought ten bicycles, and I tried to make tourist excursions on the mountain*" (Interview PE, May 19, 2019). He bought all the professional biking equipment, such as helmets, bicycles, spare tyres, tubes, reflective vests, tools for repairing the bikes, and pumps for fixing the bicycle wheels. "*It was then when I discovered a beautiful lake that you could jump into from high above the waterfall. This is our paradise, and only a few people knew about it*". Kakavos Mountain hides numerous beautiful lakes of varying size that were created through natural processes. PE wanted to share with tourists that "*the worth of the mountain [is] beyond economic value*" (Interview PE, November 30, 2019). For the first few years, PE's business attracted mainly foreign tourists. "*Greeks are not so interested in cycling*," he explained. As with many other Greeks who live under precarious working conditions, or who are only seasonal workers, summertime was, for PE, the opportunity to earn a living.

In summer 2014, a group of young Greeks decided to go on a cycling excursion with PE on Kakavos. The day was hot, and when they reached one of the lakes, PE decided to dive in. He jumped from a rock, but instead of diving into water, he plunged into mud. He was shocked and embarrassed. "*I am really sorry,*" he said to the group, "*I have never experienced that before*". The tourist group left disappointed with the forest experience. As PE described to me, the mud in the lakes "*is an outcome from the mining company's operations on the construction site. All of this mud must have come from them digging the earth and opening holes in the ground*" (Interview PE, May 19, 2019). The preparations of the large-scale mining assemblage have already affected the livelihood of people like PE. His embarrassment in front of the tourists was something unexpected but strongly felt.

PE's livelihood has been affected both spatially and temporally. It has been spatially affected because the Kakavos Mountain, on which his economic activity was taking place, has been reshaped by the large-scale mining assemblage. The mud in Kakavos' lakes was the outcome of preparations for the large-scale extraction process, and became a restrictive factor for PE continuing his tourist excursions on the mountain. Therefore, he abandoned the prospect of tourist excursions. PE's economic and social wellbeing has been in direct antagonism with the interests of the mining assemblage. While he and his economic activity depend on the agents and agencies of Kakavos Mountain, such as the waters, the large-scale mining operation understands these agents as replaceable resources that currently disturb the smooth running of the mining assemblage. In other words, the large-scale mining assemblage creates a hostile environment for PE and his activities. This was the reason PE began to focus more on the local young population. In recent years, by working voluntarily together with the youngsters, he has created rudimentary infrastructures to improve the physical condition of the younger members of the local community, through cycling-training and educating them about the surrounding natural environment. The main goal for him was to teach the youngsters to respect the forest, and as he explicitly pointed out, "*I wanted to redirect their anger and hate for the whole mining situation to something healthy and creative*" (Interview PE, May 19, 2019).

This local business became a means for the young population of Ierissos to get to know the forest of Skouries. PE and the young people started activities such as forest cleaning, by collecting trash and placing trashcans at different spots in the forest. They also created infrastructure like wooden ramps, and bought shared equipment like uniforms and helmets for their forest excursions. Within a few years, PE and the youngsters had constructed a space for sports activities and had raised respect for their surrounding environment. This commoning assemblage has created a new culture of respect for the environment, and has made it clearer that there are benefits for the

population when protecting Nature. The bicycle store became important for the local population when the youngsters started participating in multiple cycling competitions, won medals, and brought pride to the local community. More importantly, the young people began to perceive the surrounding environment as the means to their success, a "*healthy environment means better conditions for our physical and mental health*" (Interview PE, November 20, 2019). At some point, their parents started participating in the activities of this commoning assemblage. The bicycle store provides a powerful educative force that aims to connect respect for the environment with a healthy and joyful lifestyle. What started as a local business has managed to give Ierissos community one more reason to raise awareness, care for, and protect their mountain from large-scale mining. It has shown that even small market initiatives can play a role in challenging environmental problems when they evolve through *caring with* and an awareness of the importance of Nature for a local community. Figure 6.5 shows one of the excursions at the foothills of Kakavos, with young and older participants.

Figure 6.5

Bicycle Excursion on Kakavos Mountain

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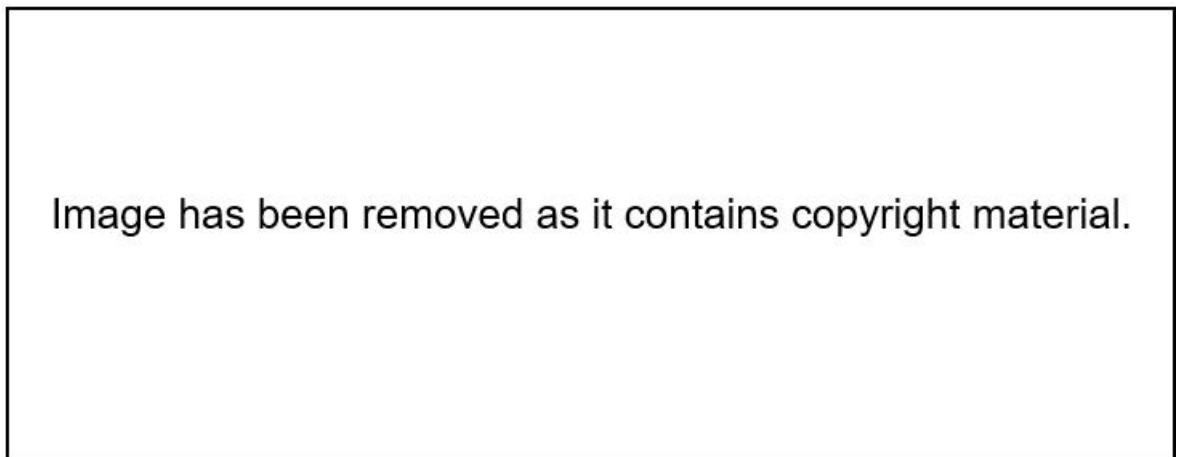
Source: Participant KS

While the bicycle store did not manage to make a profit from tourism, it became a focal point of reference for the local population, who could now enjoy the spring and summer mountain excursions. During summer, Kakavos' ecosystems and weather conditions are ideal for joyful mountain excursions. Similarly, the youngsters' outdoor training takes place mostly during spring

and summertime. In addition to bicycle excursions, PE explores alternative forms of physical exercise together with the young people, with walks through the town and the forest, and sometimes parents come along. His approach is intimately dependent on weather conditions and the status of Nature, because he utilizes the natural landscape as a gym for the young people to train. Under this light, PE's social activities depend directly on the spatio-temporal conditions of the environment on and around Kakavos Mountain. However, the more the mining assemblage establishes itself in the area, the more significant the change to this commoning assemblage will become.

Looking at the bicycle assemblage from a perspective of hope and change, I notice a few things. Firstly, its recent developments and the redirection of focus onto training and education of the local population have benefited the youth and the broader local community. Secondly, through practices of *caring with*, new forms of knowledge have been produced within the bicycle assemblage. The youngsters and PE have created a new culture of respect for the natural environment, while also having eased tensions amongst the local community. Thirdly, by coming closer to the natural environment, the young people and PE have created a legacy that is maintained and rewarded by the successful participation of the youngsters in different cycling competitions, and of their parents who have understood that the environment helps to maintain the wellbeing of their children, to raise awareness about the importance of Nature, and to redirect hatred for mining towards creative and affirmative action. Finally, this positive stance creates a dynamic that could possibly transform, or contribute to, new forms of commoning assemblages in the future.

A few days after one of my interviews with PE, we took his car and visited different spots on the mountain and the area around Skouries mines. On the sides of the road, one could see the interplay of older and younger trees and amongst them hear the sound of water. Getting closer to the minefield, the scenery and landscape became different. The colours suddenly changed – from green to a pale dusty white, where the ground felt like a powder, as if it had been processed and become something that could not sustain life. That was, to me, an apocalyptic vision. The following Figures 6.6 and 6.7 show how abruptly the landscape had changed within only a few months, echoing what I personally experienced after 7 years away.

Figure 6.6

Radical Landscape Changes in Skouries During 2012

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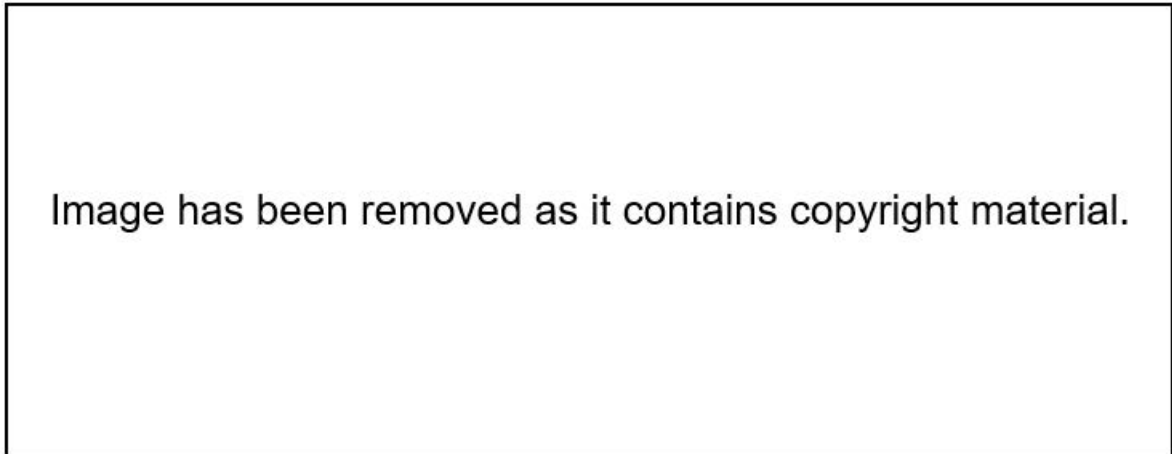
Source: Participant KS

Figure 6.7

More Landscape Changes on the Road to Skouries

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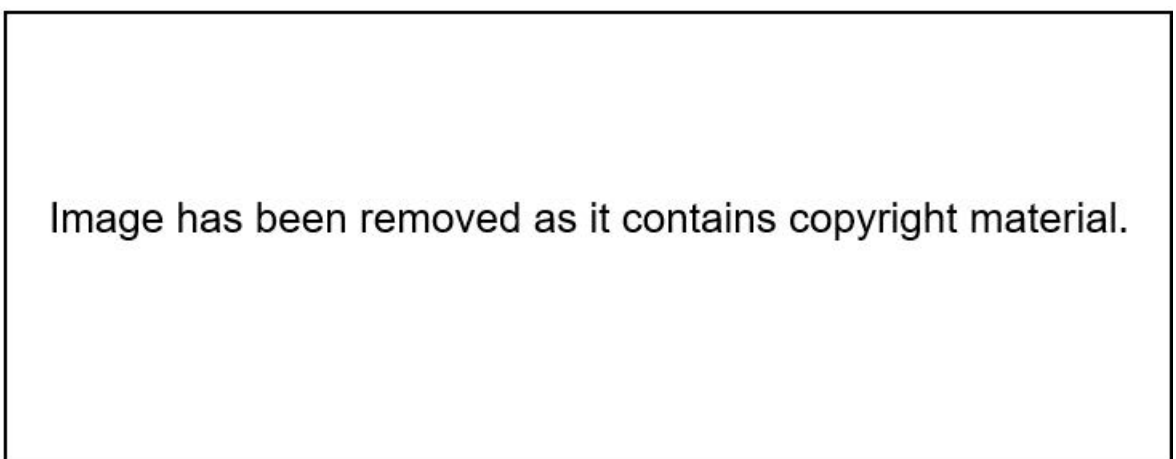
Source: Participant KS

These images bring to my mind what happened a few years earlier in 2013, in Rosia Montana in Romania, where a whole village was devastated by gold mining (Velicu & Kaika, 2017). In 2013, the village of Rosia Montana seemed like an empty place abandoned by both humans and the more-than-human, a place where connections amongst and between species had become impossible. Luckily, and because of people's persistent resistance, the gold mining has been temporarily halted in Rosia Montana (Ciobanu & Stoica, 2019), and assemblages between people and the non-human elements are growing strong once again. Resistance to mining in Romania has allowed people to maintain part of their livelihood. It is not yet certain that this will happen in Skouries, but the experience in Rosia Montana projects what the alternative dystopian future could look like. However, commoning assemblages like the bicycle one could be a spark that spurs a wave of resistance that could have long-lasting positive outcomes for the local community and beyond.

The story with PE points out that the mining assemblage and the bike-store commoning assemblage are antagonistically opposed. PE encountered the mud in the lakes as a first-hand experience of the outcome of the process of establishing large-scale mining in Skouries. The mud in the lakes is a result of the ongoing process of establishing this new large-scale assemblage of machines, chemicals, valuable metals, and national, international, and private institutions. The tension that arises from the new assemblage is that mining creates new conditions and antagonisms that will affect the already-established small-scale assemblages around Skouries. PE experienced only the beginning of a process that is about to come. However, his educational attempt indicates that there is also hope that a knowledgeable and healthy young generation could resist the further degradation of their social and natural environment from mining. Setting up cycling infrastructures, so as to utilize space for reasons that create new values and ethics in the local community, might challenge the purposes of the large-scale mining assemblage. Older people see that cycling-training and infrastructures help the young population to develop an athletic vigour and a respectful spirit for the forest and environment, which might work to the benefit of the anti-mining community in the future. Yet, the imminent question about environmental and social degradation remains: In what ways will the large-scale mining assemblage affect and shape the new social, economic, and natural landscape in Aristotle Municipality? It is an open question that the local community is responding to in multiple ways. The following Figure 6.8 illustrates my understanding of how the commoning assemblage comes together through heterogenous and vibrant agencies with the aim of protecting the surrounding Skouries environment.

Figure 6.8

Relationships Surrounding the Bicycle Livelihood Assemblage

Source: Author

6.1.4   Discussion about Examples of Livelihood Commoning

In this subsection, I summarize the elements that characterize the three livelihood commoning examples I presented previously. I do this to clarify how socio-material relations are flourishing and maintaining a different political ethos across space and time. In the following Table 6.1, I have collected the basic characteristics of each commoning assemblage, concerning their socio-material relations, space, time, purpose, and scale, and finally, their relationship to the mining assemblage.

Table 6:1

Basic Characteristics of Livelihood Commoning Assemblages

Small-scale assemblages	Chamomile-bee	The women's collective	The bicycle store
Socio-material relations	Humans, chamomile, bees, waters, soil minerals, tools, trees, air.	Women, machines, fruit, flour, yeast, facilities, bureaucracies, equipment.	PE, bicycles, tourists, children, parents, tools, infrastructures, Skouries Forest, the store, cycling equipment.
Spatial dimension	Chamomile grows and spreads on Kakavos Mountain. Bees migrate to Kakavos Mountain to meet pollinators such as the chamomile.	The collective is in the centre of Ierissos village and attracts customers from all the other villages. Food is bought from local suppliers, supporting farming in the area.	Store in Ierissos, athletic activities, tourist and environmental excursions on the mountain.
Temporal dimension	Chamomile grows every spring and summer on Kakavos. Bees are attracted every summer by pollinators such as the chamomile of Kakavos Mountain.	The collective depends on the temporal rhythms of the fruits used in the production process.	The excursions depend on the period of the year. The development of the youngsters' athletic spirit and respect for Nature takes time.
Purpose and scale of influence	New relations can potentially forge beyond the space the relations of the *caring with* assemblage produce and maintain. The locality and space of the relations produced and maintained are the points of reference and are of importance for any other new relation outside the space to develop.	Creates new and old challenges, identities; produces new possibilities of development and economic empowerment. It helps the development of forms of knowledge that are transferred to other assemblages in which the women of the example participate.	While socio-material relations have already been destabilized, PE's orientation to educating and training local youth expands the scale of knowledge and his reputation beyond the space in which the commons is located.
Relation to the mining assemblage	Threatened by removing underground waters, the smoothening of space leads to the smoothening of the different agents' temporal rhythms.	Plants and fruit are threatened by the smoothening process the large-scale mining assemblage imposed upon the materialities in Skouries Forest. In addition to that, the mining assemblage threatens to break links between the assemblages that the women of the example tie together.	The cycling assemblage has already been affected since PE lost his ability to do tourist excursions on the mountain, due to the destabilization by the mining assemblage on the natural habitat he depended upon.

Source: Author

In each of the commoning assemblages presented so far, the relations between different agents and agencies are connected to localities, such as the mountain, the forest, the waters, and the fruits that grow in Skouries. These are all spaces of proximity to people's living spaces,

including their houses and the facilities where their economic activities take place. However, the knowledge generated within these commoning assemblages creates a legacy beyond the spatio-temporal boundaries of each assemblage.

The maintenance and reproduction of the spaces shape the existence and diversity of the agents and agencies in the future. According to researchers and my participants, and based on the analysis I conducted in the previous chapter, the large-scale mining assemblage poses a threat to the viability of a variety of different agents and agencies in Skouries when carrying out the smoothening process (Interview AP, May 4, 2019; Aristotle University of Thessaloniki, 2012; Benos, 2012; SoSHalkidiki, 2013a). In addition to the immediately damaging effects of large-scale mining, the destabilization of ecosystems reverberates through societies.

For the livelihood assemblages to flourish, maintaining existing agents and agencies across Skouries space is fundamental. For all three commoning assemblages to thrive, attentiveness to their unique temporal rhythms is required. For example, each assemblage is dependent for survival on the seasonal changes of the agents around Skouries. For the agents of the bicycle store, the chamomile-bee, and the women's collective, spring-summer is the season that provides the most potential for each commoning assemblage to flourish. The longer 25-year time frame of the large-scale mining assemblage and the smoothening process threaten the existence and the spatial and temporal diversity of different agents and agencies.

While the large-scale mining assemblage has been negatively depicted by the people of the anti-mining community, it did have some unexpected beneficial effects for the people of the municipality. People from the women's collective challenged identities and social norms deeply rooted in this traditional Greek society. Challenging the role of a household caregiver, getting to know and feeling empathy about other members of the local community, and taking social responsibilities, have all resulted in highly creative commoning assemblages, such as supporting the establishment of the Christmas Village, and, without previous experience, organizing and supporting protest against large-scale mining.

The economic maintenance of small-scale livelihood commoning is not detached or disentangled from capital circuits, or the production of surplus value and economic growth. For the bicycle store, the women's collective, and even the chamomile-bee commoning assemblage, some form of economic profitability is necessary. The maintenance of commoning assemblages depends on the production of surplus value. Here, I merely confirm what Gibson-Graham et al. (2013) have already noticed from their own empirical research. In my case, the difference with the

large-scale mining assemblage is that the livelihood commoning assemblages have not been designed with a dominant focus on economic growth. In other words, economic growth does not dominate other intrinsic values. Instead, these livelihoods prioritise forms of care. Therefore, different values, such as solidarity and mutual aid, empathy, and relations of care for the children, the elderly, the bees, and the plants, create possibilities to flourish and contribute to the local-community economies in ways that are not directly oriented towards producing economic growth. In addition to that, as PE's example shows, building social infrastructures that manage to connect a healthy lifestyle with respect for the nature around Skouries could play an essential role in the development of a strong opposition to the mining assemblage.

Theorizing the livelihood assemblages as commoning practices of *caring with* means that I locate a political potentiality in them, which is not always explicit or well-articulated. The politics of commoning assemblages can be messy; the personal interests of their participants can raise tensions and antagonisms, and inequalities are always present in these vibrant worlds (Deleixhe, 2018). While they fight against a destructive large-scale investment, participants in these assemblages redefine who they are, how they are related to humans and the non-human world, and challenge their established identities and perceptions of the other. These are daily mundane confrontations which, while invisible much of the time, are a precondition for building institutions that are not primarily based on economic growth. At the same time, *caring with* assemblages like the livelihood ones depend on a diversity of relations. The effort to maintain agential pluralism cultivates a pluralistic ethos and an ontological openness that offers excellent insights about the ways we can respond successfully to complex social problems.

Since each livelihood assemblage's viability and the maintenance of the socio-material relations across space and time are threatened by the large-scale mining assemblage's establishment, all of them pose a potential source of resistance to it. Such observations carry within them the seeds of a political change towards struggles being articulated. The political change of livelihood assemblages has its roots in a different set of values and ethos than the one(s) the large-scale mining assemblage prioritize. The reorganization and reprioritization of values by the commoning assemblages potentially informs opposition and resistance to the development of a productive monoculture in a particular community.

According to political scientist Elinor Ostrom, these forms of commoning based on *caring with* – that include food and confectionary preparations, the reciprocal ways in which people interact with each other, the bicycle educational trips, treating the chamomile and the bees with care and respect – are all political acts that entail a plurality of democratic elements. Following

Ostrom's logic, commoning assemblages can deal with local problems that public authorities by design fail to approach (as cited in Wall, 2017, p. 61). The reason for that is the ability of local communities to compartmentalize and focus on the core of a particular problem because of the knowledge and the embodied experience a local community has of the surrounding space (Bollier & Helfrich, 2019). But it is the collaboration between State and commoning assemblages that multiplies the potentiality to respond to a particular problem, because its institution could offer something different to a particular problem (D. Wall, 2017). I address the role of the State in Chapter 8.

Finally, while the large-scale mining assemblage has been depicted as a catastrophic assemblage for the local area, paradoxically, it has also had some positive effect on the local society. As the case of the women's collective shows, the anti-mining struggle provides a frame for challenging identities and norms well-established within a small society (Felstead et al., 2019; Fotaki & Daskalaki, 2020; Nightingale, 2019; Velicu & García-López, 2018). The women of the example have managed to break a series of patriarchal stereotypes and norms within their local community. They did so by being at the forefront of the anti-mining struggle in Skouries. This challenging spirit was instigated by the threat of the large-scale mining assemblage. In this case, the large-scale threat can also be understood as a motivator for developing alternative political visions. In the next chapter, I turn the focus towards the commoning assemblages that have been created in response to large-scale mining, but that have also openly envisioned the need for political change.

Chapter 7:
Political Commoning

In this chapter, I explore how small-scale political assemblages have formed and responded to the large-scale mining proposal for Skouries. I categorize them as political assemblages because they directly challenge a form of politics based around economic growth. From this perspective, they pose a direct threat to the mining assemblage and the forces that support its establishment and maintenance. Due to their political potential for challenging the area's dominant mode of being and producing, I recognize political assemblages as *caring-with* commoning assemblages. For each assemblage, I explore those socio-material relations which entail a potentially transformative political force (Bollier & Helfrich, 2019; Gibson-Graham et al., 2016). In addition to that, I explore each assemblage's scale of influence and its relation to the mining assemblage. The purpose of this analysis is to facilitate understanding of how political alternatives to those based solely on economic growth provide a distinct political ethos and ontological standpoint.

Differentiating the political ethos and ontological standpoints from the dominant ones enables an exploration into how commoning assemblages can contribute something new to the discussion on how to mitigate the negative effects of the Anthropocene epoch. I refer to modes of being and acting that are attentive to the different spatial conditions and temporal rhythms of the socio-material relations around Skouries. To better outline the different political ethos presented through the specific commoning assemblages, I bring them into a dialogue in the final section, in order to trace commonalities and differences, and to discuss how political commoning can contribute to the broader Anthropocene discussion.

The choice of the four commoning assemblages is based solely on the narratives expressed by the participants of my study. They set the agenda, and they provided the data. Through my description and analysis, I endeavour to show a tiny fraction of the complexity of relations, how and why they are established, each assemblage's purpose, and how each assemblage is maintained in space and time. To make the discussion more vibrant, at the end of each section I have mapped out primary agents and agencies that define the character of each assemblage, spatially, socio-materially, and temporally.

7.1   Political Commoning

Political commoning refers to those commoning assemblages that were borne of a necessity to respond to the large-scale mining assemblage. In the particular case study, this means the generating of an alternative developmental strategy and political vision for the local community. Here, I profile four different examples of *commoning-as-caring-with*: the Ten-Day Festival, the nursery school, the Christmas Village in Ierissos, and the elections assemblage.

7.1.1   The Ten-Day Festival

In 2009, people from Megali Panagia village formed an anti-mining group whose purpose was to discuss possible small-scale activities to oppose the establishment of the large-scale mining assemblage in Skouries Forest. Since the forest is just a few kilometers from Megali Panagia, the local population's concern regarding the then-imminent negative consequences of large-scale mining is understandable. Some of my participants from Ierissos confirmed this:

> *In Ierissos, for years we did not pay attention to the negative consequences of*
> *small-scale mining, because we could not feel or see anything significantly wrong*
> *in our village. We were supporting mining before Eldorado Gold. Unlike us, in*
> *Megali Panagia they already have many problems with the mining procedures.*
> (Focus Group 4, December 7, 2019)

From this observation, one can understand that the spatial proximity to the minefield and the scale of consequences of mining played a role in the perception of the people in these two different villages. In addition to that, since the 1980s everyone in the municipality had known about the negative effects of mining on the miners' health, the environmental pollution, and the unequal distribution of wealth across all the villages (SoSHalkidiki, 2013a, 2013b). Nevertheless, "*there was never a coordinated response against small-scale mining*" (Interview AP, March 14, 2019).

In 2013, the anti-mining group in Megali Panagia decided to start a Ten-Day Festival in the Skouries Forest. From the start, the festival included music, feasts, workshops, and activism as a means of raising awareness amongst the members of the anti-mining community about the destructive nature of projects like that of mining in Aristotle Municipality. Because of their common concern about the future of their community, a group of people from the village voluntarily formed a committee that organized various collective activities. The festival has since been supported by a variety of members of the local anti-mining community. A common trait of

these people is that each member has somehow been affected by the previous small-scale mining operations in the forest. As members from Megali Panagia stated:

> *The goal of the festival is to communicate the anti-mining community's demands, to connect and build solidarity networks with other collective struggles across Greece and the world, as well as to bring people to experience and enjoy the importance of nature around Skouries.* (Participant Observation 5, December 4, 2019)

The festival aims to demonstrate how important the space in Skouries is for the local community and, through this intimate, joyful, and creative experience and the social events, to draw support and attention from movements and social struggles outside of the municipality. Above all, the strategic purpose of this assemblage is the exploration of political alternatives based on grassroots-movement networking. Figure 7.1 presents one of the workshops/feasts, where they focused on discussing how to build political networks that oppose capitalism.

Figure 7.1

Annual Ten-Day Festival, including Workshops, Music and Feasting in Skouries Forest, during 2014

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Source: Participant KS

"Brainstorming workshops, roundtables, and music events played a significant role in creating new connections and alliances between different social movements" (Interview GD, November 27, 2019). The joyful and informal character of these activities and events created an atmosphere where it was easier to cultivate a collective ethos and allow people to come closer and understand each other. In this effort, Megali Panagia's local committee has used an old coffee shop as a facility where discussions, roundtables, and brainstorming could occur. During the first years, between 2011 and 2015, anyone interested could attend and observe these discussions. The need for attention and connecting to the world made the group open to a community beyond the municipality. During the Ten-Day Festival, solidarity movements from all around Greece and the world also contributed to the decision-making processes by sharing their organizational experiences and knowledge about defense tactics against police brutality. The old coffee shop is also the location where I met with the local group and observed their problem-solving processes. *"Throughout the years this became an iconic place where the local community takes its decisions and creates the schedule for upcoming commoning activities and networking"* (Interview AP, March 14, 2019). The old café is a spatial location and a symbol of unity in maintaining the struggle and political mobilization. Figure 7.2, below, displays one of the first roundtables at the old coffee shop. The sizeable attendance shown in the picture demonstrates the enthusiasm and the need of the people to participate, to contribute, to hear, and to listen to the discussions and the worries of the different members about the future of the local community, and about the future of the movements in general and their collective strategies as a way out of capitalism.

Figure 7.2

Roundtable Hosted by Megali Panagia's Committee

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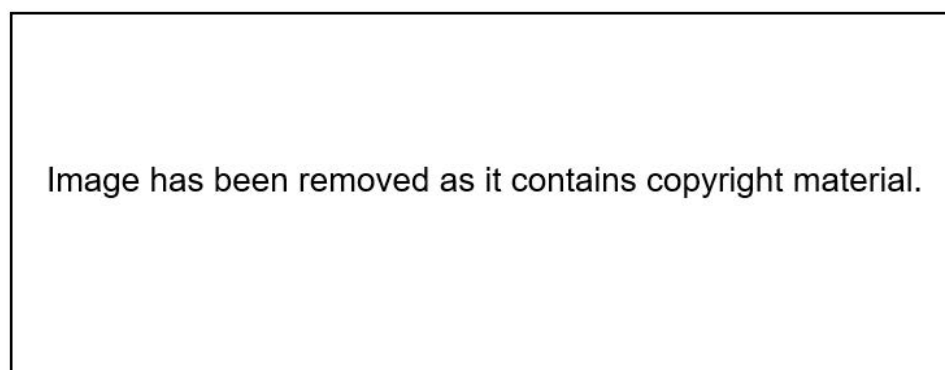
Source: Participant KS

While the space in which the festival takes place was decided at the very beginning, the commoning community is dynamically formed through their willingness to participate, their access to the space, and its availability during the summer. In 2020, before the pandemic outbreak, I participated in one of the committee meetings where the Megali Panagia anti-mining group was preparing the schedule for the Ten-Day Festival. The first year of the annual Ten-Day Festival was in 2013, with 2020 being its seventh anniversary. Every year the group delegates volunteering responsibilities to various members of this committee.

> *One person is responsible for the music and technical equipment, the sound, the lights, and the placement of the speakers. This is a job performed alongside the bands who are invited to participate. Another person is responsible for finding the bands that will take part in the festival. Someone is responsible for the economics, while farmers from the area are invited to provide meat, potatoes, local delicacies, and drinks.* (Interview GD, November 27, 2019)

Volunteers contribute to setting up a stage, arranging parking spaces; they accommodate and provide food for the bands and the other participants. Many participants come from all over Greece and other countries to learn about Skouries' anti-mining struggle, to share their personal experiences, and to better understand how other local struggles connect with the one in Skouries. A team of people from the anti-mining group has the responsibility of accommodating them.

The process of assembling this commoning assemblage takes time. Since the festival takes place at the end of July and the beginning of August, the preparations must begin in March. "*To deal with the different tasks, an enormous amount of labour is required, as well as dedication and personal sacrifices*" (Interview ATH, June 1, 2019). In 2020, I experienced the community's struggle to arrange all the different preparations during the beginning of winter. Some committee participants had already contacted bands and musicians that wanted to participate in the summer festival. However, the pandemic outbreak changed the plans for everyone when they needed to cancel the event. It was a drawback that many social movements have faced in the most challenging way, since the in-person connection cannot be replaced at all.

For seven years, the Megali Panagia anti-mining group managed to maintain the festival by adapting and negotiating the different arrangements and activities required every year. While there was no fee for participants, different members could contribute to the commoning assemblage either with products or with economic resources that could be used for the maintenance of the collective. This maintenance of the different collective activities through the years has been

based on the group's ability to adapt to the needs of the different participants, and their ability to contribute time and resources (Noterman, 2016). In that sense, this commoning assemblage portrays the varying levels of participation involved and the benefits received by the different members according to their contribution each year. That means that not every member is able to participate equally in the responsibilities of this particular commoning assemblage every year. For example, some participants might be preoccupied with private matters during the period of the festival, which would absorb time and resources from their contribution, and limit how much they can care for the commoning assemblage. Some others, such as:

> *...farmers and cattle breeders can contribute differently to the festival, depending on how their production evolves during the year. If the crops do not grow, or if the animals cannot produce milk, the assemblage will have to find alternative ways to find cheese and bread, for example. Other participants could be unfit for particular responsibilities.* (Participant Observation 1, March 16, 2019)

For these various reasons, the group must take these changes into consideration every year, and the members must try to adapt to the demands of the communing assemblage.

Without *commoning-as-caring-with*, it would have been impossible to assemble and maintain all the different parts of this festival. Megali Panagia's anti-mining community, out of their concern for maintaining the environment that sustains them, had started a commoning activity that was not preoccupied with economic growth. For the people of this anti-mining community, the forest is important for a decent life. As people of the anti-mining community in Megali Panagia have argued, "*Without the forest, the clean air, and the water, we will lose the ability to live in our village*" (Participant Observation 3, May 17, 2019). As a participant in my study has pointed out:

> *For us [Megali Panagia's anti-mining group], the forest is a vital part of our community. We get our salary from farming, beekeeping, cattle breeding; all activities depend on the forest. Apart from that, it also protects us from floods and other physical disasters. It gives us – and protects – our life.* (Participant Observation 3, May 17, 2019)

The Skouries Forest is a source of life, protection, and a space that allows for a diversity of activities and relations to flourish. In that sense, the Ten-Day Festival is a commoning assemblage that seeks ways to maintain the forest. It is a reciprocal relationship that is sustained through participants' adaptation, negotiation and differentiation of caring activities every year.

During the planning process, many problems can arise, and disputes can occur. Some people raise concerns about animal treatment, while others are worried about logistics. Leading figures of the group expressed the idea that "*humans should live in harmony with the nature around them*" (Participant Observation 4, November 27, 2019). What my point is here is that the more people relate to the non-human agencies that are utilized as resources for the maintenance of the festival, the more their attentiveness towards the non-human increases. To my understanding, this is because most group members are farmers, loggers, and beekeepers and are directly connected to cattle, sheep, and bees. A farmer inside the group mentioned that "*our animals are like our families; for us, it is important to live well with them and continue doing what we know to do*" (Participant Observation 5, December 4, 2019). That means that some people in the group do not just see their animals as providers of meat and dairy products or as commodities for sale, but that they recognize their animals' agency and subjectivity. As Vinciane Despret (2008) has argued in her article "The Becomings of Subjectivity in Animal Worlds", domesticated animals respond to the treatment of humans, as well as negotiate the process of providing for and judging human intentions (p. 135).

Like these examples, farmers from Megali Panagia have presented their animals as co-constitutive agents of the local assemblages that maintain both humans and non-humans in the area. Participant GV argued in a documentary: "*My animals are my life. I talk to them, and I feel their pain. You cannot imagine how difficult it is to manage cattle if you do not have good communication with them*" (Interview GV in Avgeropoulos, 2012). Thus, the festival is a commoning assemblage that non-humans co-create.

This perspective on animal agency links well with my observation about the chamomile-bee assemblage in Chapter 6 and the attribution of agency to plants. More specifically, these are two examples of commoning assemblages that show how people attached closely to Nature can develop different perspectives about the non-humans they are connected to. However, attributing agency to animals does not deny the small-scale exploitation of the animals in maintaining the assemblage throughout the years.

Despite the occasional disputes, this commoning assemblage became especially well-known during the years when the police violence was at its extreme, public authorities were openly opposed to the anti-mining struggle, and the anti-mining community was united despite their different strategies, political ideologies, and lines of thought. Through the years, the Ten-Day Festival became one of the most stable events of the anti-mining community. The successful stability and maintenance of the festival is based on: the relations created amongst the various

participants; the solidarity provided by social movements and individuals that are external and sympathetic to the struggle; the exchange and development of ideas and knowledge that is constructed by experiencing the space, and bridging together different manifestations of a similar political demand. Another factor concerning successfully maintaining the Ten-Day Festival is the persistency and ideological coherence of Megali Panagia's anti-mining group members. That coherence has helped to maintain this commoning activity, even though participation has reduced over time. To give an example, during the first years of its establishment, people from across the globe were visiting: "*We had to feed and host a few thousand at the beginning of our collective struggle*" (Participant Observation 4, November 27, 2019). However, after the change of government in 2015, there was a significant decline in attendance and activities. Within a few years, the number of participants fell from thousands to a few hundred people.

The main driver and a common political aspiration that unites the Ten-Day Festival is: "*for local communities to be able to decide how to design the future [while] respecting the natural environment*" (Interview GD, 27/11/2019). In that sense, the Ten-Day Festival strove to communicate its aspirations and visions while expanding its scale of influence to a broad community of movements and individuals, at the same time striving to find common ground between the anti-mining struggle in Skouries and other struggles across Greece and the world. In this case, *commoning-as-caring-with* is not only about the practical concerns of setting up the festival, but also a knowledge-commons that includes processes of exchanging ideas, knowledge, building new relationships, and sharing experiences that could potentially lead to articulations of alternative visions of living and organizing, which, in turn, could challenge the expansion of the monoculture of the mining assemblage and its incessant urge for economic growth.

"*As the years passed, the Ten-Day Festival started facing organizational and economic problems. The roundtables and the turnouts have been reduced during the last few years*" (Interview GD, November 27, 2019). The disappointment resulting from the inability of the Left government to stop the mine, the long judicial processes that had affected almost every member of the group in Megali Panagia, and the division between the local anti-mining groups across the municipality, led to a low morale and a motivation for organizing the commoning assemblage. In addition, the more the mining process has expanded, the more the people have lost space for commoning activities. Some of the commoning activities have to move to different locations, including people's houses, parking lots and local stores. The Ten-Day Festival, as a commoning assemblage, is at threat of enclosure by the large-scale mining activity. Although hard to predict, it is quite uncertain whether the festival will keep its current form, or even whether it will be further

maintained after the Covid-19 cancellation. In Figure 7.3, I show a snapshot of some of the more general socio-material connections of the festival.

Figure 7.3

The Ten-Day Festival Political Assemblage

Source: Author

7.1.2   The Nursery School

In 2011, in a town hall meeting, the mining-friendly mayor announced to the local community in Ierissos that Eldorado Gold was about to renovate the old police department and transform it into a nursery school. The old police facility was located next to the local public park in Ierissos. The facility was important because it was the only public space available for hosting the nursery school. One of the participants remembered:

We [the people from Ierissos anti-mining group] attended this town hall meeting. We wanted to know the municipal authorities' plans for our community. When we heard the mayor talking about the renovation of the old police department with the

> *funding of Eldorado Gold, we said 'no'; we told him that we do not need the*
> *company's sponsorship. We [would] renovate the nursery school on our own.*
> (Interview VK, May 30, 2019)

As people have described it, the mayor responded by saying: "*This is impossible! The town does not have either the economic resources or the time to prepare the building before autumn*" (Interview LP, November 28, 2019).

The anti-mining community decided to prove the mayor wrong. A group of volunteers decided to utilize assets and skills they have access to in order to create something for the common good, without depending on the funding of the mining company. Consequently, they started assembling a commoning assemblage by renovating and transforming the old police department into a nursery school as a collective. By dividing up the tasks, people started working to transform the old police station. The group used privately owned tools such as hammer drills, impact drivers, circular and reciprocating saws, oscillating multitools, and other professional machinery. Some used their private vehicles, including trucks, to transfer materials such as wood, concrete, and glass to the old police station building. A participant in my study described this experience:

> *That was an amazing moment for us as a community [Ierissos anti-mining group].*
> *Nobody expected that we could renovate the old public building and give life to it*
> *again. We did not have the economic resources, neither the time the mining*
> *company could provide for the construction of this infrastructure, yet we made it.*
> (Interview GVE, May 20, 2019)

For years, the local authorities had been economically dependent on the funding provided by the different mining companies operating in the area. This strategy had raised many questions from the local population about the level of political autonomy of their municipality. This was intensified, especially when the anti-mining community realized that the dominant narrative the local authorities followed was the divisive message: "*Either a prosperous economy, or the forest in Skouries*" (Velegrakis, 2015). In 2011, the anti-mining community said, "*Enough is enough*". As some of the participants in my study noticed, "*The renovation of the nursery school was a demonstration that we do not need the money of the mining companies in order to manage our community*" (Focus Group 1, March 13, 2019). The community decided to take ownership and responsibility of the nursery school's transformation as a response to the entanglement of state authorities with the mining company. By doing so, they also aimed to redefine the space a local

community operates within, as well as to renegotiate the limits of institutional decision-making, while taking into consideration the interests of the local population.

The anti-mining community started openly questioning which stakeholders were involved in their community's public affairs. In addition to that, they also challenged the idea that a prosperous society is built at the expense of the environment. In that sense, the locals acknowledged that the nursery school was about renovating an old building in an effort to articulate a political alternative that forecasted a disentanglement of local politics from the mining company's interests and the logical development of the environment. *Caring with* became the glue for forging relations and experimenting in practical ways of overcoming the economic dependency of the local authorities on the mining company.

For a couple of months, volunteers from the anti-mining community used their evenings to participate in the making of the nursery school in Ierissos village. It was a period when "*we left our children alone in the house. We prepared food for them, and after that, we went to help the others with the renovation*" (Focus Group 3, May 21, 2019). The anti-mining community's enthusiasm and will to prove the local authorities – who were pro-mining – wrong, led to an experimental exploration of the community's capability of reclaiming the public management and space from local and national authorities. Figure 7.4 shows the efforts of the volunteers in renovating the old police department.

Figure 7.4

Renovation of the Nursery School in Ierissos' Old Police Station, during 2011

Source: Participant KS

COMMONING IN THE ANTHROPOCENE

A participant in my study said:

> *We [Ierissos Committee of Struggle] were all surprised that we managed to complete the renovation before the end of August. You could not imagine how every one of us sacrificed our free time during the evenings to come and help.* (Interview GVE, May 20, 2019)

In this sense, this commoning assemblage shows that collective care and effort can produce outcomes that can be both eye-opening for the participants because it reveals to them an unexpected creative potentiality deriving from the collective, but it also challenges an established status quo that is presented by local authorities as the only way things could proceed. The local community managed to renovate and transform the old building in the centre of Ierissos in a short period of time, while at the same time proving that the state authorities could find alternatives to funding obtained from interests that might be harmful to a society and the environment.

The maintenance of the nursery school is based on the collective efforts of the local community, especially the teachers, the school children, and their parents. Ongoing maintenance takes time and requires various practices of collective care, such as dedication to cleaning the school, organizing cultural and social events, and after-class courses to support the children with their homework. The anti-mining community has invested a lot of time and resources in this process. Important to notice is that the nursery school is a state-owned property in which commoning practices take place. The public authorities are the ones who decide the curriculum and the codes of conduct inside the school.

From the time a school becomes operational, it is the Greek State that takes responsibility for who has access to its premises. Yet, the values formed through the collective effort to assemble this school – for example, the solidarity amongst the commoning participants – encourage the people to take collective responsibility and care for the institution beyond the state guidelines. In this sense, it is both the state authorities and the community that are benefited from the collective caring effort.

The importance of the nursery school extends its own spatial limitations. The benefit of a public institution is shared by more than the people and families of children who attend the school. Under this light, the alliance of a state institution with the influence of a commoning assemblage can create a collective-caring culture that infuses the mindsets of the people who put their bodies into the work of this construction, as well as those of the educators and children, who experience a different way of approaching state-designed curriculums. For example, according to some of my

participants, in this specific school, educators lay stronger emphasis on collaboration and egalitarian approaches to learning than do other nursery schools, where educators focus on developing the individual skills of the child (Interview ATH, June 1, 2019; Focus Group 1, March 13, 2019). The legacy of practices of collective care is that they have infused a state institution with stances and behaviours that challenge the competitive frame often promoted by neoliberal authorities. In that sense, the school has become a symbol for all those who want their children to learn patterns of social behaviour that are different to teachings in other schools in the area. As a participant in my study pointed out when speaking on the topic, "*This is as a sign of the attentive work and the caring processes that take place in the school*" (Interview ATH, June 1, 2019). The maintenance of this collective culture is now based on both the efforts of the anti-mining community and the political choices of the public institutions. Public authorities could support this collective culture by creating more institutions that amplify the positive effects that the commoning legacy leaves behind.

The nursery school is a commoning assemblage that is not facing a direct threat from large-scale mining, because it is aligned with the public authorities in a way that makes it difficult for a private investor or pro-mining public authority to dispute its value, at least for a while. Until recently, the welfare state in Greece understood the value of an institution that provides state education as one of its cornerstones. In that sense, the nursery school is an institution that plays a central role in the development of a welfare state (Vercellone, 2015), and since the State runs it, there is no reason for concern. However, within an environment in Greece where there is increased influence from private companies and private schools, the value of public school for the welfare of a local community could be challenged. In the following Figure 7.4, I present some of the agencies that come together to make the nursery school a collective asset for the local community in Ierissos.

Figure 7.5

The Nursery School Political Assemblage

Source: Author

7.1.3   Ierissos Christmas Village

In 2013, the pro-mining conservative Greek government of that period sent the State Police to Ierissos village. To discourage the anti-mining struggle, the police intentionally threw teargas canisters into Ierissos' school while children were in their classes (ekathimerini, 2013). This act triggered a massive wave of commoning responses across the municipality. One of these responses was the construction of a small-scale Christmas Village in Ierissos, like the one in Stratoni village presented in Chapter 5. Some of the adult members of the anti-mining community, especially women from Ierissos' cultural association, decided to establish "*the Christmas Village [that] could bring joy, and teach some of the local traditions to the local kids*" (Focus Group 1, March 13, 2019). Men of the anti-mining community volunteered to set up small decorated wooden houses in the centre of Ierissos, inside the central public park.

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In just a few weeks, people from the anti-mining community managed to build the wooden Christmas houses that constituted a small village, using their own private tools and economic resources. Volunteers from the anti-mining community used their private vehicles and trucks to deliver wood, and they brought their personal tools to assemble the small colourful constructions. All the different parts were assembled and tied together with a generosity of volunteer effort and collective care. The assemblage built and established the constructions on a public property, despite the opposition of the mayor at that time. The constructions were completed before the Christmas of 2013. When the Christmas Village started operating, some of the village cottages were connected to the women's collective assemblage, some to a local cultural institution, each creating a schedule of events in which volunteers could enter and participate. The logic followed the structure of Stratoni's Christmas Village. "*We organized theatrical plays, music events, and poetry readings. These events were always accompanied with food and wine that people brought from their houses*" (Focus Group 2, May 3, 2019). For the next few years, every Christmas, the anti-mining community managed to revive old traditions and create new ones through the blending of generations. As some of my participants pointed out, "*We have seen hope and enthusiasm in the young generation. It was so encouraging for us, as well, to see young people give new dimensions to our tradition;*" for example, "*folk music was remixed in ways that we never thought before*" (Focus group 2, December 2, 2019). In other words, the Christmas Village strengthened the community's collective efforts, creating new forms of communication and tradition through intragenerational commoning. The following Figure 7.6 shows one of the wooden houses, a product of the collective care and effort of the anti-mining community.

Figure 7.6

Wooden House, Part of the Christmas Village Commoning Assemblage in Ierissos

Source: https://www.newsbomb.gr/ellada/story/385772/hristoygenniatiko-horio-leitoyrgei-stin-ierisso

The Christmas Village in Ierissos is another political example of a *commoning-as-caring-with* assemblage. I characterize this assemblage as *caring with* because the people of the anti-mining community started it as a response to two things. Firstly, the Christmas Village is a commoning assemblage that directly confronted public authorities by establishing a Christmas structure on public grounds, and by targeting children who had been harassed by the police. Secondly, it was inspired by the Christmas Village in Stratoni that was funded and supported by the mining company. There is significance in this mirroring strategy. By constructing the Christmas Village in Ierissos, the anti-mining community wanted to make manifest the contrast in values between the two different commoning assemblages. For example, unlike Stratoni Christmas Village, the funding of Ierissos Christmas Village came directly from the local community through a crowdfunding process. Independence from the economic interests of the mining company was a fundamental element in community economics (Gibson-Graham et al., 2013). It was a political action aimed at directly challenging Stratoni's Christmas Village. Through collective care, people overcame personal differences that brought to light values and forces of which people had not previously been aware. People who previously did not like each other became closer. "*I came closer to people I never liked. Before, I did not care to know them. But this struggle helped all of us to overcome our stereotypes for the others*" (Interview GVE, May 20, 2019).

For the next few years, the Christmas Village in Ierissos became a symbol of resistance to gold mining. The maintenance of this public space became an important tradition for the anti-mining community.

Due to this collective process, many traditions revived, kids learned and practiced forgotten customs, such as potlucks and theatrical plays. Nevertheless, every year the anti-mining community had to create a new program of events, and Christmas decorations to maintain the Christmas Village, and keep the participants' spirits high and the creativity alive. (Focus Group 2, May 3, 2019)

Every year, various theatrical plays, social events, and Christmas themes take place. Participants have varied from year to year as a result of the particular demands on them and the shifting of personal priorities.

To better manage this commoning assemblage, the local community in Ierissos formed an anti-mining committee in charge of deciding every year's Christmas events and decorations. The committee became responsible for choosing which children and other volunteers would participate in the theatrical plays, what themes to present, and which traditional dances would be performed. As people themselves described it: "*The Christmas Village in Ierissos provided a space for us to come together as a community, to care for each other, to share the joys and the difficulties that we were experiencing*" (Interview AN, January 20, 2019). This observation indicates a need for collective care as a way of strengthening community bonds through culture. The Christmas Village influence extended to beyond Ierissos:

The goal was to bring the kids from the other villages to celebrate with us. We wanted to show to the kids that they can live in a better world without mining. Teach them our traditions. (Focus Group 3, May 21, 2019)

The anti-mining community wanted to show all the children that their traditions depended on their surrounding environment, and that this was being threatened by the mining assemblage.

However, in 2015, local authorities and the Greek government changed. Anti-mining authorities took over at both the local and national levels. This had an unexpected effect on many in the Skouries anti-mining struggle. The Christmas Village was one of the commoning assemblages negatively affected by this change, as people were no longer mobilizing in opposition to the government. The motivation and enthusiasm of the people to continue maintaining the Christmas Village in Ierissos declined, which led to its gradual decay.

From 2015 onwards, participants reported that the Christmas Village was losing its rigour and vibrance. People started feeling less motivated to maintain the small buildings and to participate in collective events. This is reflected in a comment from one of the major contributing participants of this commoning activity: "*We are tired of this process, we still want to do it, but it requires time and money, and we are getting tired after so many years of trying*" (Focus Group 3, May 21, 2019). What the participant pointed out is connected to a fading enthusiasm and hope that had been motivating the community in the years before 2015. As another participant in my study noticed, "*We were very confused, because the new government was sending mixed signals about their plans for mining in the area*" (Interview ML, May 19, 2019). The fading motivation and the fatigue in maintaining this specific commoning assemblage are an outcome of economic, political, and temporal issues that divide the local community. In Figure 7.7, I present some of the agencies that assembled in order to create the Christmas Village in Ierissos.

Figure 7.7

The Ierissos Christmas Village Political Assemblage

Source: Author

7.1.4   The Election Assemblage

This final *commoning-as-caring-with* assemblage emerged through the elections. The evolution of this commoning assemblage has been a synthesis, a process, borne from the need of the anti-mining community to articulate a political and developmental alternative to the establishment and operation of the large-scale mining assemblage. The *election assemblage* summarizes all the political energies of the livelihood- and political-commoning assemblages, because it moves from the social sphere in which commoning takes place, to the political sphere, by openly offering an alternative in the here-and-now. This political alternative has, as a main goal, to challenge the hegemony of economic development that has for years dominated municipal elections (Velegrakis, 2015). Therefore, within a climate of economic, social, and political uncertainty and crisis in Greece, and after the rise of many commoning assemblages that encouraged people to believe in political change, the anti-mining community decided to challenge the mining front by electing anti-mining authorities.

The anti-mining community managed to mobilize a significant portion of the local population and expatriates to come and vote to change the political landscape. As a participant in my study noticed, "*What happened in 2014 and 2015 was something amazing. Greeks from all over the world came enthusiastically to vote. They wanted something to change*" (Interview ND, May 18, 2019). It was the first time that the anti-mining community had felt that the municipality could survive without being dependent on mining companies. The enthusiasm at that time was enormous. An interview participant has explained:

> *The years between 2011 until 2015 were amazing. You could see people around setting their differences aside; they were hopeful and ready to sacrifice [themselves] for the good of the collective.* (Interview GVE, May 20, 2019)

The left-wing political party of Greece, SYRIZA, which was on course to becoming government, declared its support to whomever the anti-mining community chose as a candidate for the local elections. Thus, with a combination of local and national politics in favour of the anti-mining struggle, the local community thought they could find an institutional way to cancel the large-scale mining project.

Commoning practices created a culture of solidarity that had been difficult to find previously in the local community. As an interview participant explained:

> *Before 2011, we were like everyone else. We did not care for each other. The anti-mining struggle brought us close. We learnt to be with each other; we forged new relations of respect and care; we changed ourselves.* (Interview ML, May 19, 2019)

Setting aside differences, as my participant observed, also meant something else. The solidarity built amongst the people of the anti-mining community did not imply that everyone agreed on the alternative vision of development for the municipality. For example, a major oppositional developmental vision was based on large-scale tourism.

> *Our place [Ierissos] has everything a tourist needs. Why [are] the other two legs of the Halkidiki Peninsula based on large-scale tourism, and here they left us underdeveloped? Large-scale tourism could solve our problems.* (Interview AP, May 4, 2019)

My participant refers to one of the popular alternative visions for development that focuses on the replacement of large-scale mining with large-scale tourism. Other visions have promoted small-scale developmental plans, such as "*small-scale agrotourism*" (Participant Observation 2, May 10, 2019), or the continuation of small-scale assemblages, including fishing, farming, and beekeeping (SoSHalkidiki, 2013b). Maintaining all these different visions under the common anti-mining umbrella is necessary because they remain marginalized. None of them have yet found a way to compete in replacing the large-scale mining assemblage and its vision of development. Setting aside all these different visions and ideological differences, the anti-mining community has managed to channel all their enthusiasm, hope, and solidarity through social experiments of commoning, translating into a political force for change. In order to be able to materialize the array of different collective sentiments into a political alternative, the anti-mining community had to decide which candidate would best represent their interests in the next municipal elections.

To find the perfect candidate, the anti-mining community decided to set up polls at each of the different villages in the municipality – in other words, a bottom-up candidature selection. The goal was to select a public figure who could represent the anti-mining community and who already had the respect of the opponents. A participant noted that:

> *We [the anti-mining community] selected a self-made businessman as our representative. We wanted someone who knows how to run a business and tidy up the*

economics of an organization. We are fed up with politicians. (Focus Group 1, March 13, 2019)

My participant's observation projects two very interesting and interrelated elements that became very widespread during the economic crisis in Greece. These elements are also popular amongst right-wing narratives, with a perception that politicians are corrupted and only care about their own personal economic interests (Rohac et al., 2017). This impression presents a logic that has affected politics throughout the past decade, not only at a municipal level, but also in global politics and national elections (Kuper, 2018). Within this frame, the anti-mining community wanted to choose a representative who did not have previous attachments to the discredited politicians of the country. The idea of choosing a businessperson reflects an aspiration "*to put in front a person who does the job without saying big words, as politicians generally do*" (Interview ML, May 19, 2019).

At first it might seem contradictory to choose a businessperson as the anti-mining candidate. The reason for that is because consciously promoting someone who cares primarily for the economic profitability of their company is someone who might not be the right person to care for the collective good of the local community. However, one of the major problems in the local community was that they had lost faith in the country's politicians, which unavoidably led them to look for political alternatives elsewhere. Since the political goal was to break free from the "*established political agenda and vote for someone who gets the job done*" (Focus Group 1, March 13, 2019), someone who was perceived as competent to deliver on their promises seemed an appealing choice. Ironically, this logic resembles some of the populist, anti-establishment arguments that brought Trump to power in the US in 2017 (Homolar & Scholz, 2019). However, for the local community, this was a radical idea at the time.

Despite the reasoning for selecting a self-made businessperson as the front face of the anti-mining electoral campaign, the commoning assemblage's primary goal was to win in the local elections. That could also mean an effort needed by the local community to compromise their different interests and developmental visions about what the future of the local community after mining should look like at its core.

"*The process of assembling the election assemblage required a strong commitment from all different anti-mining groups, and care for all the ones who worked for months to maintain it until the election day*" (Interview RI, March 13, 2019). The reason for that is that coordination of such a project requires a solid commitment to a particular purpose, ongoing volunteer work, and the resources for setting a complex process in motion. "*Even the ones from Megali Panagia, who*

by ideology did not believe that state institutions could contribute to their struggle, for the first time accepted to play a role in sustaining the elections assemblage" (Interview TD, May 31, 2019). For example, the anti-mining community had to find buildings to set the polls, to find available rooms, and receive clearance to use specific facilities. Chosen delegates had to ensure the process. People had to be convinced to vote and had to be transported to the voting facilities. Lawyers contributed by sharing their legal knowledge about how official voting procedure functions. Finally, a group of people had to take care of snacks and everything else that would allow the process to be completed as adequately as possible.

The scope of the election assemblage was to enable the local community to answer the problem of what the community should do politically to promote an alternative vision of development to that of large-scale mining. Most specifically, it responded to the question: "*What is the next step and a way to make the change we want and stop the large-scale mining investment?*" (Focus Group 5, December 12, 2019). According to one of the participants:

> *Many people from the anti-mining community understood that social practices without a political mechanism that can amplify and translate social resistance into a governing plan, will not have the chance to stop the large-scale mining investment.*
> (Interview GZ, November 30, 2019)

Since the end of 2014, political institutions have been recognized by many members of the local community as strategic partners who could maintain and develop the anti-mining demands into concrete institutional policies.

As I have noticed, the election assemblage promotes a shift of scale of influence that connects social practices to political institutions. This perception, however, did not occur in a vacuum. The rise of the national left-wing party, and its logic towards supporting social struggles across Greece without overtaking them, played a role in people realizing that the institutional can be connected to the social without sabotaging each other. That was, at least, the ideal principle before SYRIZA came into power in January 2015.

The outcome of the election assemblage was that the local community elected, for the first time, an anti-mining mayor together with a cabinet of political figures who all wanted to see a change in the development strategy for the municipality. The following Figure 7.8 shows the major agencies that came together to create the election commoning assemblage.

Figure 7.8

The Election Political Assemblage
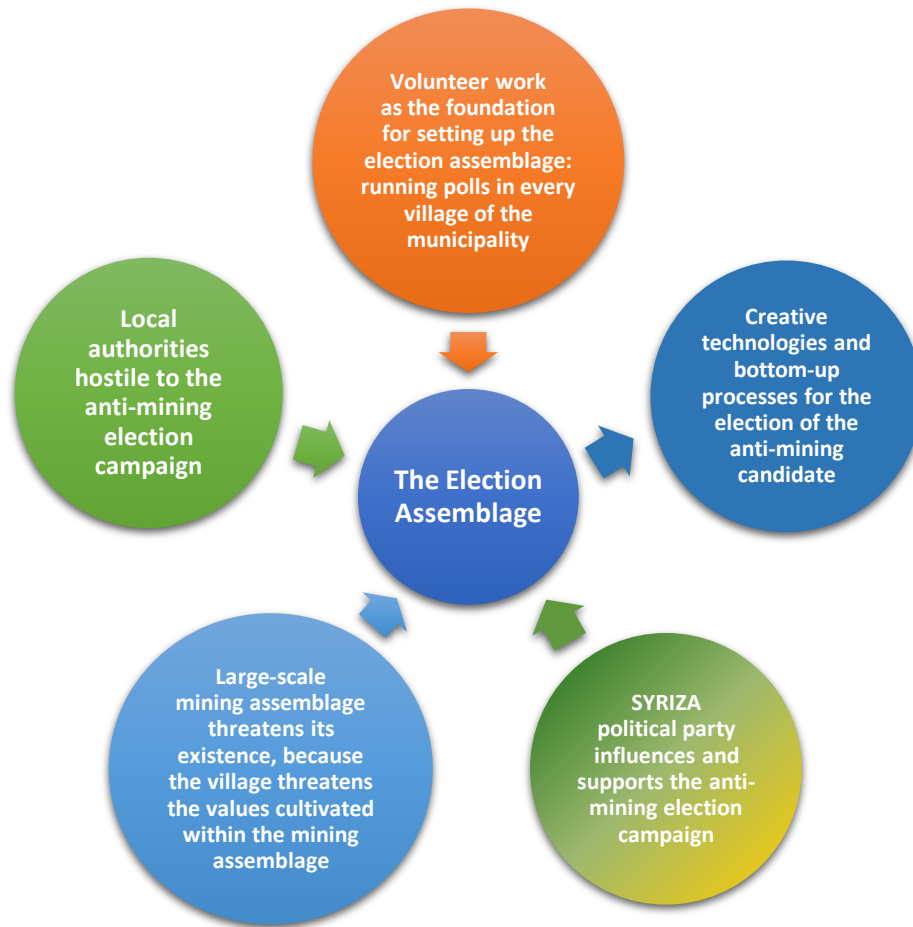
Source: Author

This commoning assemblage is different to all the others, because it aimed to give a particular response to mining by overthrowing the political authorities who were responsible for the large-scale investment in Skouries. The anti-mining community managed, through building commoning assemblages, to not only challenge and undermine the efforts of the large-scale mining assemblage in taking root socially and economically in their area, but also to find a political means to overthrow it. However, as we see in the next chapter, the relationships and influences between the anti-mining commoning assemblages and the anti-mining local and national authorities were not the ones to be expected, leading to decay and disillusionment, far from the excitement that had greeted the elections.

7.1.5   Discussion about Political Commoning Assemblages

In this subsection, I concentrate on the basic elements of the four commoning assemblages with a focus on political mobilization. The elements concern the socio-material, spatial and temporal dimensions, the scales of influence, and the threats the assemblages face. More specifically, I bring into dialogue the four commoning examples to better understand how they represent a different political ethos to that of the mining assemblage. In Table 7.1 on the following page, I have concentrated and grouped the elements that make each small-scale commoning assemblage distinct, while showing the connections between the different commoning assemblages. Each of the four diverse assemblages contributes differently towards the maintenance of socio-material relations across space and time around Skouries.

Table 7.1

The Basic Characteristics of Political Commoning Assemblages

Small-scale assemblages	The Ten-Day Festival	The Christmas Village in Ierissos	The Nursery School	The Elections
Socio-material relations	Humans, animals, plants, technological equipment, volunteer work, music bands, workshops, social movements, roundtables, local delicacies, drinks	Humans, wooden houses, technical equipment, tools, trucks, vehicles, volunteers, Christmas lights	Humans, equipment, tools, trucks, vehicles, volunteer work	Humans, voting polls, booths volunteer work
Spatial dimension	Area on the mountain, parking-lot arrangements	Centre of Ierissos village, public space	Restructure of the old police department next to the town hall and Christmas Village	Every village in the municipality participated in a bottom-up electoral process
Temporal dimension	Summer event. Maintained and differentiated every year according to participants' requirements, abilities, and time to spend on different tasks.	Event taking place every Christmas. Maintained and differentiated according to participation, needs, and availability of members of the local community.	The school had to be built in a few months from the time the public authorities decided its construction. After its construction, the public took over, set the curriculum and timetables.	This was a commoning activity that was organized in a few months, but it has been the political outcome of the course of years of anti-mining social struggles in the form of commoning in the area.
Purpose and scale of influence	To connect and share knowledge with social movements and individuals who share common problems: extractivism, land grabbing/ degradation, water scarcity, air pollution. These movements were attracted from all over Greece and sometimes the world.	The event was an initiative of the anti-mining community with two primary purposes. First, to bring joy to the local community's children, and the second was to construct a community-funded Christmas Village as opposed to the one in Stratoni funded by the mining company. Its scale was local and was limited to a very particular time of the year. It is not as well-preserved as other collective-care practices.	The facility's construction was a political statement that the anti-mining community could run their public affairs without the economic support of an international mining company, which is perceived as destructive for the municipality, social cohesion, economic stability, and health of the local population. The forms of collective care and collective knowledge produced in this public space are the elements that attract children from other villages to become members of this specific school.	The election assemblage was an effort to articulate *commoning-as-caring-with* practices into a political vision of an unarticulated alternative to the vision of large-scale mining development. Its scale was limited in choosing a figure that could represent the anti-mining community in the local municipal elections. The outcome was the victory of this person in the local elections, in 2015.
Relation to mining assemblage	The mining assemblage threatens the spatial and temporal existence of the festival by eliminating the spaces where the festival takes place.	The mining company indirectly threatens the Christmas Village in Ierissos. The Christmas Village's existence and maintenance depends on the will of the local community to continue it, other than that, a reason for ending this commoning practice is the lack of resources.	Its existence depends on the local community's ability to live in the village (Ierissos) where the school is located.	The collective-caring practice was threatened by a well-established political opposition (the mining bloc), which had been winning all previous municipal elections. By winning consecutive elections, the mining bloc created a strong culture of dependency on mining in the area. The strategic failure of community authorities friendly to the anti-mining to shut down the mines led to the re-election of mining-friendly authorities in 2019.

Source: Author

All four of the particular political commoning assemblages I have described in this chapter are situated around Skouries. Like the livelihood assemblages, the political assemblages refer to assemblages glued together through practicing *caring with* around the Skouries Forest. Multiple diverse agents and agencies are concentrated in specific spaces around Skouries. The Ten-Day Festival shows the radical potential of *caring with*, when visiting groups or individuals who come to experience the space around Skouries can collectively decide strategy and priorities. By experiencing the space, they also relate to it through their own struggles that share similar challenges.

The specific commoning assemblages of this section show that the diversity of relations developing amongst different actors takes time. Ideas and practices mature and change over time. Some adapt, and others fade away and are replaced by others, through a continuous process of *caring with*. Examples of relations that fade away can be found in the Ten-Day Festival and the Christmas Village in Ierissos. In the case of the nursery school, the entanglement of public institutions and commoning practices continues. While at first the local public authorities were hostile to commoning practices, the local community's success in building the nursery school changed that. This led to the creation of new political opportunities towards compromise, negotiation and perceptions that could create new cultures amongst public officials and the participants of commoning practices. This shows that commoning practices can benefit from entanglement with state and market structures, and not only experience them as a threat.

As Gibson-Graham et al. (2016) have noticed, public authorities are time and again late to come on board for society and its needs. One could also notice drawbacks in the process of social and political transformation. Not every major change happens linearly. In many cases, reactionary forces have proven very resilient, managing to slow down social and political change in synchronicity with the needs of society. However, what is essential in this discussion is that the anti-mining community's commoning has delayed the smooth establishment and operation of the mining assemblage and the furthering of the entanglement of private interests with the politics of the municipality. As a result, it has maintained and prolonged the diversity of existing socio-material relations in space and time around Skouries. The delaying of the establishment of the mining operation allows political ideas and commoning practices to mature and find ways to articulate new political visions for the local community. The struggle between commoning assemblages and large-scale mining points out that no process is absolute. Smoothening is partial, and the bumpiness created by resistance to it provides possibilities for new lively connections to

occur, political alternatives to flourish, and life to continue. These examples show that life, as well as the political terrain, is always open to change and always contestable.

I have chosen to describe various commoning assemblages to show that their establishment, maintenance, and future development are not based on a particular developmental monoculture. Instead, each commoning assemblage's existence depends on particular relations between humans and non-human agents. In that sense, relationships between humans and the non-human vary between the different assemblages and within a particular assemblage. Thus, human participants within each assemblage develop unique relationships with each other and their environment. Moreover, these relations develop and are maintained in varying ways across space and time.

While not every commoning assemblage is directly related to the others, many are constituted of the same people. From the discussions I had with the participants, and from the collection of secondary data, I can confirm the existence of an inequality in the power relations and influence of the specific agents within the anti-mining struggle. None of the commoning assemblages are perfectly egalitarian or disentangled from the capital circuit and its need for surplus-value production. My empirical investigation showed that the anti-mining commoning assemblages are messy entanglements between agents. However, they represent different forms of power-sharing to that of the mining assemblage and of the commoning assemblages that support mining.

Livelihood-commoning assemblages and political assemblages also express a democratic element through praxis. The ability to unite towards a common goal and transform diversity into a strength in the struggle for political change has made political assemblages a hopeful sign in the Anthropocene. The reason for that is, as the political assemblages of my case study show, people want to shape the rules that govern their lives, to have access to and affect decision-making processes, and to control or hold accountable those who take decisions on the important matters in their lives. That is itself a sign that democratic principles are not outdated in the Anthropocene. It is rather the current frame that needs to change to include commoning in decision-making processes.

Conclusion

The small-scale political assemblages I have described above are all part of a broad constellation of assemblages, all carrying their own unique characteristics, values, and relationships amongst their agents. Each assemblage develops its own spatial footprint and temporal patterns. Through my commoning cases, I observed a shared trait amongst the different commoning assemblages, in that they were all preoccupied with maintaining the current diversity of relations around Skouries. By prioritizing the maintenance of existing relations around Skouries, both political- and livelihood-commoning assemblages have resisted the smoothening of the spatio-temporal dimensions of agents and agencies in the area. That also means a struggle to allow the diversity of socio-material relations to flourish at their own pace. This diversity of relations refers not only to specific caring practices, but also to the ethics these practices embody.

What I mean by that is that while the mining assemblage is preoccupied with care for economic growth, political- and livelihood-commoning assemblages embody a plurality of values, of which economic drivers such as the production of surplus value is only one amongst others. For example, economic values such as the production of surplus are important for the maintenance of commoning assemblages, but this is not a predominant value. Under this light, the idea of economic development can be one value amongst others, such as solidarity, care for the non-human and for children. This infers a different value balance within political- and livelihood-commoning assemblages that allows for a diversity of socio-material relations across space and time to flourish.

Having observed how the mining assemblage operated, we could argue that political- and livelihood-commoning assemblages have qualitatively different characteristics from the mining assemblage. This qualitative differentiation projects a different political ethos. The mining assemblage demonstrates a model of violent imposition of specific socio-material situations, which disregards or diminishes existing relations, spaces and temporal rhythms. By doing so, it imposes a monoculture of development that eliminates spatial and temporal diversity. Unlike the vision of establishing a mining monoculture, political- and livelihood-commoning assemblages refer to a plurality of visions and practices that have as a goal the maintenance of diversity of relations in the local community. That itself is a political project of resistance to the development of the mining monoculture. As long as none of these diverse groups of developmental visions have found political expression, they serve the common goal of the anti-mining community, that of

political change. This strategy to keep alternative visions of economic development marginalized allowed the anti-mining struggle in Skouries to succeed with some significant social and political success between 2011 and 2015.

Through these chapters, I have brought to light the otherwise unseen social struggles of the people, and the plurality of the commoning assemblages of the local Skouries community, bringing more visibility and consideration to their relations. I have focused on the diversity of being and acting that can help us understand the importance of plurality and diversity of practices that exist alongside mainstream politics. The next chapter focuses on the role of the Greek State and local public authorities in the anti-mining struggle, and poses a question about the future development of commoning assemblages in this new epoch.

Chapter 8:
Commoning and the State

This chapter examines the relationship between two different Greek governments and two different local municipal authorities in Aristotle Municipality, with the commoning assemblages around Skouries. The aim is to explore how the change of government behaviour has affected commoning. The premise of this chapter is that the anti-mining struggle was oriented not only against the large-scale private investment, but also against those political institutions that support private investment. The aim is to generate insights into how state authorities influence the commoning practices in this specific case study. This is important when thinking about how to amplify the positive effects of commoning in the Anthropocene, a theme I return to in Chapter 9.

I divide the chapter into two main sections. The first section examines the relationship between the Greek State and municipal authorities towards the mining investment. By doing so, I provide an overview of the Greek political party dynamics around Skouries. It is important to do this in order to understand why state authorities were in favour of specific forms of commoning, but hostile to or ignoring of others. The second section focuses on the actual relations between state authorities and the different forms of commoning that I have presented in Chapters 5, 6 and 7.

The two sections follow a chronological structure of analysis. The first period runs from the end of 2011 till 2015, when pro-mining authorities were in power at both the state and municipal level. Between 2011 and 2015, the conservative Greek government decided to proceed with the large-scale mining operation, despite the social resistance to it (Apostolopoulou & Cortes-Vazquez, 2018; Meynen, 2019). I have chosen the end of 2011 as a starting point for the chapter, because it was then that the first mass anti-mining mobilizations took place on Kakavos Mountain (Calvário et al., 2017, p. 12). During that time, the conservative Greek government, New Democracy (*Nea Demokratia* [ND]), and the collaborating social-democratic municipal authorities, encouraged and promoted large-scale mining in Skouries. The second chronological period was between 2015 and 2019, when the left-wing party SYRIZA (*Sinaspismós Rizospastikís Aristerás – Proodeftikí Simachía* [Coalition of the Radical Left – Progressive Alliance]) formed a progressive-coalition government and took over from the previous conservative-coalition

government, at both state and local levels. In 2019, a conservative (ND) pro-mining government and municipal authorities returned to power with a more radical large-scale investment plan.

This chronological categorization is based on my informants' point about the intensity of commoning practices during different periods across Skouries. One of them observed: "*The [commoning] practices were analogous to the intensity of violence the Greek State used against the anti-mining local community*" (Interview GZ, November 30, 2019). Similarly, another participant argued: "*The more the police were hitting us, the harder we wanted to show to everyone that we do not need them [the mining company]*" (Interview MAR, May 16, 2019). My participants pointed out that there is a correlation between state violence as a process of enclosure that provokes the formation of specific commoning assemblages. In each section, I identify different types of relations between commoning assemblages and the state authorities. I close the chapter with some final remarks that derive from my observations, leading me to the next chapter and my overall response to the thesis question.

8.1   Greek Political Party Background: The Relationship of Political Parties to Local-Level Politics

Large-scale tourism has been selected by the Greek political system to be the predominant economic activity in most of the Greek regions. However, Northern Greece is an exception. The soil is rich in coal and valuable metals and has allowed the Greek State to develop extractive activities in regions like Kozani, Alexandroupoli, and Halkidiki. This extractive activity plays an essential role in increasing living standards, maintaining economic growth and sustaining a variation of different social activities in the country as a whole (Nelsen, 2016). With its powering of households, hospitals and businesses, Greece depends on the extraction of coal. As previously mentioned, small-scale mining also has a longstanding tradition in Aristotle Municipality (Velegrakis, 2015). The rich geological formations of the area had drawn the attention of mining companies long before Eldorado Gold and Ellinikos Xrysos.

The economic potential of extractivism has been supported by the two dominant parties of the Greek political landscape since the '80s. Both the conservative ND (New Democracy) and the social-democrat PASOK (Panhellenic Socialist Movement) supported mining as the dominant mode of production of economic growth for the local area (Velegrakis, 2015). New Democracy and PASOK are the two political parties that have dominated the Greek political landscape since the fall of the military dictatorship in 1974. The two political parties had been succeeding one another in power at both state and local levels until 2015. In modern Greek politics, the relationship

between state authorities and local governance has been characterized by competition and cooperation (Hlepas, 2020). The two political parties have traditionally been aligned on prioritizing mining in the Aristotle Municipality, above all other visions of economic development. Such priorities have been rewarded, since the majority of the local population had consistently voted for pro-mining coalitions until 2015 (Velegrakis, 2015).

The vision of economic development put forward by local and national authorities and the local population seemed to erase any concern about large-scale mining. Through the years a culture around mining has been constructed. Labour unions and private interests created ties to the major political parties. For example, small tourist businesses in the municipality started hosting mining personnel, police were ordered to protect the mining investments from local protesters, managers and other high-ranked state officials visited the region to do business with the mining industry. Under this light, national and local authorities have created a landscape within which a particular vision of economic growth has created the dependencies and the conditions for social prosperity through its sustainability. Challenging this new culture would mean to put at stake the conditions that provide social and economic benefit to a broad network of social agents.

In 2011, things changed drastically for the political landscape of the country. While social democrats and New Democracy held power until 2015, the popularity of both parties began to decrease in light of the choice of both political parties to impose the austerity measures dictated by the European Union and the International Monetary Fund. This choice created space for anti-austerity and anti-mining political narratives to flourish, and for the eventual rise of SYRIZA nationally and at the municipal level.

SYRIZA's popularity was accompanied by an effort of the academic community to communicate the negative effects of large-scale mining on the local community in Skouries. The involvement of the academic community disrupted the idea that mining was the only way for economic growth in the municipality. Scientific data and argument played a significant role in raising awareness amongst the local population about the implications of large-scale mining. The local community in Skouries became interested in the consequences of mining for the local society, economy, and health of the population (SoSHalkidiki, 2013a).

The rise of SYRIZA and its anti-mining/anti-austerity rhetoric played a significant role in the way the local community imagined an alternative economic vision for the municipality. However, the election of a local anti-mining candidate would not be enough to stop the mine, as

Greece is one of the most politically centralized countries in Europe (Hlepas, 2003). As a previous mayor of Aristotle Municipality told me:

> *In Greece, [as local authorities] you can make a complaint to the government and try to point out why a political decision can be harmful to your land. Apart from that, there is nothing else we can do as local authorities.* (Interview GZ, November 20, 2019)

According to Nikolaos-Komninos Hlepas (2020), the problem in Greece is very complex. Even the national court of Greece had blocked essential decentralization reforms concerning planning and regulatory autonomy when the social democrats had wanted to implement them in the '90s (p.14).

The failure of decentralization reforms in the Greek political system has been assisted by the way people have been encouraged to engage in politics. In the '80s and after the fall of the military dictatorship in Greece, civic engagement had developed on a two-axis system. PASOK was the political party that had redefined the relationship of State and citizens' democratic engagement. Civic engagement was primarily defined by citizens' association with the specific political party, and not with citizens' participation in decision-making processes (Crouch, 2006). In other words, the political party operated as the mediator of democratic engagement. For example, if a citizen knew someone related to the party, they or a family member may have access to benefits others would struggle to attain. This approach cultivated a culture of corruption and the privilege of individuals, and weakened collective and community politics that could otherwise have provided a way for collective demands to find their way into the political realm of the country (Kioupkiolis, 2018).

In general, this post-democratic condition, as sociologist Colin Crouch (2004) called it, weakened the civic organizations, especially the Left and anarchist groups (Della Porta, 2018, pp. 97-99). It was actually a paternalistic stance that had affected the idea of civic participation for more than two generations in Greece (Malamidis, 2021). Following the steps of PASOK, New Democracy had foregrounded its own networks of clientelist relations within state institutions and local organizations. Over time it seemed almost everyone in Greece knew someone from PASOK and ND who could satisfy their own personal interests. This paternalistic stance influenced social and political institutions, while creating strong clientelist relations amongst social and political agents across local and national levels in Greece (Hlepas, 2020, p. 14).

Following this model of democratic engagement, the modern Greek political landscape had created local and regional authorities heavily controlled by central government and party politics. Aristotle Municipality was not an exception. The mayor, who had led the most significant dispute in the municipality's modern history between local authorities and the local society around Skouries, had been one of the most popular and powerful ministers in the government of PASOK before the outbreak of the economic crisis in the country.

As I mentioned earlier, the economic crisis that had started in 2008 partly challenged the establishment of the political party system, the electoral habits of the local population, and the way civic engagement had been understood since the 1980s. More specifically, in 2010, PASOK signed a Memorandum of Understanding (MoU) with the European Central Bank (ECB), the International Monetary Fund (IMF), and the European Commission (EC). Practically, this is an agreement for EU member states and the IMF to lend money to the country to pay off its enormous public debt, in exchange for neoliberal reforms in the form of austerity measures and a package of large-scale private investments (Mourmouras, 2012). Austerity measures and large-scale investments became the vehicle through which the Greek governments collected money to pay back the loans to the country's international lenders. One of these private investments is the large-scale mining project in Skouries. A year later, while unemployment rates in the country skyrocketed, labour rights were shattered, and the social welfare system was radically dismantled (Basta et al., 2018; Lekakis & Kousis, 2013; Tsoulfidis et al., 2016), members of the social democrats and the conservative party began presenting the memorandum agreements as a blessing for the country (Goutzanis, 2020).

The economic crisis became the condition for a shift in the scale of extractivism (Calvário et al., 2017; Hadjimichalis, 2014; Velegrakis, 2015). From small-scale extractivism, Skouries became a space for large-scale mining investments. Within this economic climate, the large-scale mining investment was presented by the two dominant political parties at the time as a possible way out of the crisis. The narrative they promoted and the one that the local authorities supported is based on the idea that government taxes on the large-scale extractive process of gold, copper, and ore will be distributed to the local community and the State (Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019). From the empirical data in previous case studies, this story seems to be very problematic. It has been noticed that the benefits to the national and local economies have been far fewer than officially estimated (Calvário et al., 2017; Velegrakis, 2015). In addition to that, Eldorado Gold's tax responsibilities are settled in a tax haven in Holland, with the company having few tax responsibilities towards the Greek State (Hartlief et al., 2015).

As geographer David Harvey (2005) would have argued, the large-scale investment in Skouries is a new frontier of global capital in its effort to create new forms of primitive accumulation. It reflects the urge of stakeholders like the European Union to find new sources of capital for economic growth in order to compete with other economic giants like the US, China and India. Technological advancements play an important role in the radical scaling-up and the ability to explore previously unreachable geological depths. This radical shift of scale of extractivism was one of the fundamental preconditions for challenging the previously established political culture. In 2010, Greece experienced political turbulence, which in 2012 led to the formation of a coalition between the conservatives, the social democrats, and a smaller left-wing political party, the Democratic Left (*Dimokratiki Aristera* [DIMAR]). During the economic crisis, the conservatives gradually became the dominant political party in the country and the social democrats abandoned their traditional ideological space and moved closer towards the conservatives (Botetzagias et al., 2018; Douzinas, 2013; Hatzisavvidou, 2017). The period when proponents of austerity and mining came up against the anti-austerity and anti-mining political forces had begun.

In the meantime, the local community in Aristotle Municipality was facing its own fundamental changes. The prospect of large-scale mining brought a new level of awareness about the negative effect of the extractive activity on the local community. As I mentioned in Chapter 7, people were becoming informed by academics about the negative implications of large-scale mining in their area. For the first time, many people in the municipality started questioning the benefits of mining as presented by the pro-mining state authorities (Kadoglou, M. [@antigoldgreece], 2013a). Parallel to that, provocations from the pro-mining local authorities, along with the no-alternative policy of the government, led to a massive wave of social resistance. While the tension between state authorities and the local community arose, the Greek government decided to protect the miners after the previous mining company TVX Gold went bankrupt. In 2011, the agreement with the new mining company was that 80% of the fired TVX miners would be hired by Eldorado Gold. This strategy would play a fundamental role in both the local community's division and the establishment of the new large-scale investment in the area.

At the end of 2011, the pro-mining conservative Greek government and the local authorities decided to escalate their disagreement with the anti-mining community. Instead of exploring compromising possibilities through dialogue, "*the mayor decided to ignore the community and proceeded with his plan, which was heavily dependent on the charity of the mining company*" (Interview VK, May 30, 2019). Another participant said, "*For me, things escalated because the mayor did not want to discuss the topic of extraction with us [the community]*"

(Interview STE, May 30, 2019). Another claimed that "*for years, the municipality was heavily dependent on the resources mining corporations provided to the community, since the Greek governments had granted unique authority to these companies*" (Interview AP, May 4, 2019). As a result, "*mining companies had replaced some major functions of the local authorities, such as providing cleaning services, constructing roads, repairing state-owned vehicles*" (Interview ER, May 3, 2019). The municipality became heavily dependent on the funding of the companies to provide basic services to its population. Simultaneously, the mining companies provided the welfare safety net that only the Greek State could provide in other places in Greece. That included "*working and employment benefits for the workers and their families, healthcare and employment opportunities for the kids after university graduation*" (Interview TD, May 31, 2019). Within this political climate, it would have been difficult for any kind of political authority to suddenly and abruptly break free from this entanglement with private interests, without inciting social revolt.

At the time of the economic crisis, social movements like the one in Skouries were considered to be one of Greece's 'thousand social experiments' (Klein, 2014; Varvarousis & Kallis, 2017). There are two things that make Skouries a unique social struggle. The first concerns the exploration of alternative developmental visions for the local community. Most known commoning assemblages around Greece during the period of the economic crisis had the support of the people who had lost access to the welfare state (Varvarousis & Kallis, 2017). Skouries' case took the struggle a step further, by struggling to explore alternative visions of development for the local community. The second is based on the strategy of how to achieve political change that would enable the introduction of alternative visions of development. To this exploration of political change, the left-wing political party in Greece, SYRIZA (Coalition of the Radical Left – Progressive Alliance), joined in assistance and helped boost the anti-mining community demands. Five years after the first Memorandum of Understanding (2010) and following three different government formations between social democrats and conservatives, SYRIZA grew from having 3% of the national electorate to winning almost 33% of the national vote in 2015, becoming the major party in a coalition government together with a small populist right-wing party. From 2015 onwards it took the political space of PASOK and, while losing the elections of 2019, it became the major opposition to the government of New Democracy. In other words, SYRIZA became the major opposition to the conservative pole in the Greek political system. Gradually, SYRIZA gained the trust and the vote of the local community in Skouries by promising to shut down the mining activity once in power. That gave SYRIZA great potentiality within the local community. The promise to shut down the mining investment helped both the election of an anti-mining mayor, as discussed in Chaper 7, and the anti-mining community later supporting the election of SYRIZA

at the national level (Velegrakis, 2015). I present a timeline of events from 2009 to 2019 in the following Figure 8.1, showing the chronology of events that connect the mining dispute in Skouries with the change of political authorities. The timeline includes a ten-year frame from 2009 to 2019, with the re-election of pro-mining local and national authorities at the end of 2019.

Figure 8.1

Timeline of Events from 2009 to 2019

2009 The beginning of Kassandra Mines in Aristotle Municipality coincides with a global trend in large-scale land investments in speculative capital, as a way of restoring economic growth at the dawn of an economic crisis.

2011 The social democratic government and, more specifically, the Ministry of Environment approves the controversial company's environmental assessment. The Greek subsidiary of the Canadian mining company gets the go-ahead to start the process of establishing the facilities for the large-scale mining in Skouries, despite the objections of the Technical Chamber of State.

2011 The social-democratic mayor in Aristotle Municipality ignores the concerns of the local community. Small protests and local assemblies (Committees of Struggle) are formed around Skouries. The anti-mining community starts to form. The first mass mobilization takes place the same year. The first emblematic political commoning assemblages start to form.

2012 New Democracy forms an austerity coalition with PASOK and Democratic Left. A new law is introduced for the improvement of the business environment. Local authorities, together with miners and police force, escalate their violent assault on anti-mining protesters and commoning assemblages.

2013 The government introduces an improved plan for large-scale investments. More space is given to companies to invest in Greece by overriding environmental laws. An arson attack is made on the working site of the mining company. Local authorities increase their pressure on the anti-mining community.

2014 The conservative government introduces a new policy with a goal of simplifying licencing procedures for large-scale investments. Eldorado Gold still struggles to establish itself in Aristotle Municipality due to a high level of resistance to it. Police oppression escalates further.

2015 It is revealed that Eldorado tax-evades in Holland. A left-wing government, friendly to the anti-mining struggle, comes into power with an anti-austerity plan. Local elections lead to a leftist mayor with an anti-mining agenda.

2016 The left-wing government fails to shut down the mines as promised before the elections. Divisions within the anti-mining movement occur. Parts of the anti-mining community decide to continue fighting their own way, independent of the government's plans.

2017-2019 While commoning assemblages become less and less vibrant, the anger against the leftist state authorities increases.

2019 The anger is expressed. Pro-mining authorities at both national and municipal level are back in power. The promise is for large-scale investment to proceed as fast as possible with terms most beneficial to the mining company.

Source: Author

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8.2   State Relations with Different Commoning Assemblages

In this section, I explore the types of relations that different commoning assemblages have had with state authorities. In each of the three previous empirical chapters I have identified three types of commoning: the accumulative, the livelihood, and the political. Each type of commoning assemblage has a distinct relationship to the mining assemblage and political actors. As described before, state authorities played a crucial role in the establishment of the large-scale mining assemblage in Skouries. Some of the commoning assemblages arose in support of or in opposition to the mine.

The goal is to understand the relationships between state authorities and the different types of commoning over two different periods of time. Each period presents a different political party in power; in the first period state authorities are pro-mining, while in the second they are friendlier to the anti-mining struggle. By understanding the relation of the different commoning assemblages to state authorities, I hope to achieve a clearer picture of how best to move forward in developing strategies that will help state authorities and commoning assemblages amplify their ability to respond to Anthropocene-related problems.

8.2.1   The Period between 2011 and 2015

In this subsection, I present how the commoning assemblages discussed in previous chapters were affected by political parties in the period from 2011 to 2015. This was a period where the New Democracy was the dominant party in national politics, while social democrats held the power in Aristotle Municipality. Both conservatives and local authorities had strategically selected large-scale mining as the means for economic growth in the area. At the local level, the pro-mining party was supported by a large section of the population, including labour unions and those private businesses depending on mining, like hotel owners and the Church. The logic was: mining produces economic growth, everyone around would benefit directly or indirectly from it, either through labour or from hosting activities, as well as people one way or another related to mining. This alliance could also be understood as an assemblage of agents with vested interests in mining. Progressively, this alliance and assemblage would start disintegrating, because more and more people in the local community would be exposed to narratives projecting the negative effects of large-scale mining, which outweigh the benefits from it.

8.2.1.1 Accumulative Commoning: Building Supportive Relations with State Authorities.

The basic argument of state authorities, and one supported by the miners, has been that the mining investment will offer decent work for more than 5,000 families in the area (Capital, 2019). That number refers to three generations of workers, untrained labour such as underground mining staff, and specialized personnel such as geologists, office administration, mechanics, architects, and technicians. More than that, the large-scale mining assemblage has been presented as a way for the local mining community to maintain high levels of social security, family time, good infrastructures, as well as for receiving social benefits such as children's education, family vacation, and healthcare schemes (Kathimerini, 2021). These social benefits have functioned as motives for the miners to support the large-scale mining investment.

Since the 1970s, Greek governments have utilized and promoted mining as the dominant mode of economic development in the municipality. While resistance has always been present, it has never been massive or widespread. The popular vote shows how the majority of the local population have accepted small-scale mining and lived off the economic benefits this produced for the local population (Velegrakis, 2015). Acceptance of mining by the local population provides a fertile ground for understanding why the commoning assemblages that support mining in Skouries are preferable to others. As one of my participants explicitly pointed out:

> *The fact that mining has a long tradition in our society [Aristotle Municipality], and generations of miners have grown and made their families here, makes it extremely difficult to stop this monstrous investment.* (Interview GZ, November 30, 2019)

This is an observation that has been repeated by other members of the local community as well. This strategy shows how historical and strategic decisions play a role in the way, for example, social relations, visions of development, formation of institutions, and individual habits, are replicated into the future (Greener, 2002; Leithner & Libby, 2017; Mahoney, 2006; Trouvé et al., 2010).

Another critical argument of state officials that justifies mining in the area concerns the rehabilitation phase, as presented in Chapter 5. The claim – that the company will restore biodiversity loss, soil erosion, and water degradation with technoscientific means after finalizing large-scale mining in the area – is powerful. The pro-mining Greek governments and local authorities have used the rehabilitation prospect as an argument to convince the local population to accept the large-scale mining investment in Skouries (Develogou, 2020; Mavrommatis &

Menegaki, 2017). With a strong faith in technology, state authorities provide the local community with a green and sustainable vision for the future. The example of current commoning practices in rehabilitation processes in municipal villages such as Olympias (Eldorado Gold, 2014b) is used to argue that both large-scale environmental degradation and human-induced environmental recovery are possible.

The economic crisis placed on hold many of the concerns and dilemmas about whether the State should be protecting the environment or fast-tracking large-scale investments to boost the economy (Botetzagias et al., 2018; Tsavdaroglou et al., 2017; Velegrakis, 2015). The Greek High Court put an end to any disputes by deciding that saving the national economy was the priority for an indebted State (National Herald Staff, 2020). Disregarding the concerns of the anti-mining local population, state authorities created tension in the municipality. The economic crisis accelerated and amplified the tensions and the antagonisms of different visions the community had for economic development. Accumulative commoning provides a safe strategy for state authorities, since it promotes a business-as-usual model based on an activity already established in the local community, whose priorities are aligned with a particular vision of economic growth. The implementation of such a strategy becomes incredibly intense in a period where alternative visions are also promoted by other groups.

The tension, importance, and visibility of different commoning assemblages who are antagonistic to one another become more evident when the severity and intensity of a crisis hits a population hard. Within a political environment of crisis, state authorities will find an excellent opportunity to maintain and intensify forms of commoning that support already-established forms of relations, societal visions, and behaviours, as a way to suppress others. That confirms what one of my participants said about the intensity of commoning: "*People [anti-mining community] wanted to show that they were not afraid of the violence the State and the company were expressing on them, so their resistance was fierce*" (Interview GZ, November 30, 2019). Under this light, a crisis can be seen as an opportunity for new political visions to arise. Still, these forms of politics are under threat of being eliminated by the existing status quo if they do not manage to root and expand through strategic alliances.

The relationship between accumulative commoning and state authorities, in the phase between 2012 and 2015, shows that they evolved dialectically with one another. The more pro-mining authorities have felt under threat, the more they have supported commoning assemblages that would sustain them in their power. Pro-mining Greek governments and local authorities have supported accumulative commoning because these assemblages have helped to establish mining

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in the local area, while also providing popular support for this activity. Through commoning, people have helped maintain and reproduce mining jobs. At that time, the Greek government and the local authorities had decided to support all social efforts that could help establish and maintain the large-scale mining investment in Skouries. Commoning practices and the assemblages formatted under this logic have been endorsed by state authorities, and the mining company in the area has supported them.

One of the problems that neither the accumulative commoning nor the pro-mining authorities could respond to was the problem of scale and the radical shift of implications this had brought to the local community. The problem of scale, meaning shifting from small to large, would for the first time bring together a diverse group of people who would soon realize the existential threat large-scale mining would play out for their health, economy, and the environment (SoSHalkidiki, 2013a). The whole anti-mining struggle, the narratives and the commoning assemblages that they support, is constructed around the existential threat of destruction that large-scale mining brings to the local community.

8.2.1.2 Livelihood-Commoning Assemblages: Their Relation to State Authorities. In Chapter 6, I reflected upon livelihood commoning as commoning assemblages that sometimes pre-exist, and which do not necessarily directly threaten or target the establishment of the mining assemblage. This allows them to develop a relationship with the State that is not antagonistic. For example, the interest of local and government authorities in the chamomile-bee-commoning assemblage is minimal, since a few chamomile collectors and beekeepers do not appear to threaten the strategic partner of state authorities or the vision that the prospect of large-scale mining embodies. More specifically, on its own, the production of chamomile and honey cannot constitute a dominant alternative developmental vision for the local area. As Participant AN observed: "*People who collect chamomile [are] a small community who [do] not have as a primary goal to make money out of it*" (Interview AN, January 28, 2019). The same applies to the beekeepers.

A similar observation can be made about the relationship between the state authorities and the bicycle assemblage, as well as with the women's collective. Although these are significant commoning assemblages for the anti-mining struggle, state authorities do not perceive them as a significant threat. The ties of the bicycle assemblage and the women's collective to capital circuits have allowed them to operate as typical economic organizations, even though their members were prominent figures of the anti-mining struggle.

Overall, we could say that the relationship between state authorities and livelihood commoning between 2011 and 2015 was relatively minimal. That does not mean that the economic dimension projected from livelihood assemblages was not part of a different political strategy. Instead, it means that the state authorities did not realize the political potentiality of livelihood assemblages. Therefore, these kinds of assemblages have been politically underestimated by the pro-mining governments and local authorities.

On some occasions, the agents of livelihood-commoning assemblages have cultivated for themselves the logic of distancing from state authorities. As Participant PE noted:

> *I wanted to teach the kids a different way of behaving [towards] the environment. We have to respect Nature; to be better than our parents. So many people have been taught to expect everything from the State. Well, I say we also have responsibility. We are the State.* (Interview PE, November 30, 2019)

Through this observation, PE has recognized some limitations to what state authorities can do, and he has also attributed responsibility to the people, especially the anti-mining community members, who have often acted in a contradictory manner to the kind of relationship they wanted to develop with Nature, for example. As PE has explained: "*To me, it seems contradictive to protest against the damage mining will cause to the environment and yet throw your trash everywhere in nature*". This description shows, once again, the messiness of commoning and the internal struggle of the people to develop collective identities that are consistent with their efforts towards an alternative future for their community.

Pro-mining state authorities did not find the economic model developing around small-scale initiatives and commoning networks appealing, because their major goal was the fast and significant economic growth that serves specific economic interests beyond the local scale – for example, the paying off of the country's public debt. As some participants pointed out to me:

> *We [Megali Panagia] do not want to depend on the State. Neither do we want large-scale investments of any kind in our villages. For example, the only form of tourism we believe is sustainable for our area is agrotourism. This can be up to [a] few cabins on the mountain, and that's it*". (Participant Observation 4, November 27, 2019)

This is a logic common amongst anti-mining groups who are oriented towards networking with other social struggles, and who only depend on their members, their alliances' capacities, and shared-collective resources.

A popular alternative vision of development that could compete with and replace large-scale mining is that of large-scale tourism. As a participant heavily involved in the politics of the local community noticed: "*If we want to make an appealing case to the State against mining, we must present a well-thought-out plan of how our economy can grow without mining*" (Interview AP, May 4, 2019). He knew from first-hand experience that state authorities wanted to have a particular plan that could boost the economy fast. Such a vision follows the logic of replacing a prevalent large-scale investment with another large-scale investment that could counterbalance the economic benefits state authorities plan to receive from extractivism. As a popular political figure in the municipality, Participant AP knew that an economic alternative to large-scale mining would have to comply with the Greek State's economic apparatus. In a sense, the anti-mining community's alternative visions were framed within a large-scale economic activity, such as mass tourism, which many perceive as catastrophic for the environment, social cohesion and health (Anup & Parajuli, 2014; Deery et al., 2012; Gutberlet, 2016; R. Li et al., 2019).

At some point around 2015 it became clear to many members of the anti-mining struggle that pro-mining state authorities would not succumb to the demands of the anti-mining community for an alternative vision of economic development in the area, despite the fears of the local community for its destructive consequences. The existing efforts of livelihood-commoning assemblages were not enough to change the situation. The need for more concrete political strategies and practices had become apparent.

8.2.1.3 Political Commoning and Antagonistic State Relations. The period between 2011 and 2015 is when the heart of political commoning was beating strong in the municipality, especially in Ierissos and Megali Panagia villages. In Chapter 7, I reviewed four commoning assemblages that had openly challenged the development narrative of the pro-mining state authorities. Each of the four commoning assemblages embodies a different political orientation and, in some cases, vision of development. However, within a plurality of political strategies and economic visions, I have located the two most popular amongst the local population. One refers to a political strategy that revolves around network commoning, meaning small-scale groups each caring for each other. *Network commoning* follows the idea that, together, the diverse group of commoning assemblages can build an alternative productive and political model that could override state and market institutions (Caffentzis et al., 2014; Carlsson & Sandström, 2007;

Chatterton, 2016; Hardt & Negri, 2011). The second political strategy is based on a narrative where commoning assemblages and state authorities do not necessarily have antagonistic interests. Instead, successful alliances between state, market, and commons can open new horizons of political possibilities and responses to a broad range of problems (Bollier & Helfrich, 2019; De Angelis, 2017; Gibson-Graham et al., 2016; D. Wall, 2017).

These two types of political strategies and economic visions are present in the two villages that became the centre of attention of the anti-mining struggle during the period 2011-2015. Network commoning was and still is part of the political strategy of Megali Panagia. The commoning assemblage that represented this model is the Ten-Day Festival, which celebrates anti-capitalism and anarchism. As my participant in Ierissos remembered:

Back then [in 2009], there were only a few people mobilized against mining in Skouries. Most of us [from Ierissos] called them 'dirty anarchists' and 'weird environmentalists' that did not want economic growth for our land. (Focus Group 2, May 3, 2019)

Many people in Ierissos had the impression that Megali Panagia's anti-mining group was an anti-developmental group of people, because many of the people in Megali Panagia did not support one of the major large-scale visions of development for the municipality.

"*State authorities were always suspicious of commoning assemblages like the Ten-Day Festival*" (Participant Observation 5, December 4, 2019). The most crucial strategy that state authorities utilized to discourage and disable the Ten-Day Festival was the prosecution of many of Megali Panagia's community members, after an event of arson on the minefield that had occurred in 2012. The conservative Greek government utilized a law against terrorist activities after the police had confiscated 53 firebombs, two knives, five gas masks, wooden sticks, and one slingshot (Kathimerini, 2012). The police arrested four people from the anti-mining community and have pressed more than 400 charges (Calvário et al., 2017; Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019; Kouti Pandoras, 2017; SoShalkidiki, 2016). The Ten-Day Festival had started operating as something more than a commoning assemblage, where various radical and anti-capitalist groups have tried to forge connections. It has also served as an institution of economic solidarity for Megali Panagia group members who needed financial support with legal processes (Kathimerini, 2012). This is a process that started in 2012 and is still going on nine years later. Members of the group have invested economic resources and time, but have paid a heavy price for this, suffering months of imprisonment during the anti-mining struggle.

Before I move on to the rest of the commoning assemblages, I want to note what one of my study participants in Megali Panagia said to me:

The ideological base of our group is based on the struggles of the [Democratic Army of Greece], who fought against the Nazis and their state collaborators during the Second World War. Our village has a strong tradition against oppression. That is why the post-war State, in which all Nazi collaborators hide within, wanted to keep Megali Panagia underdeveloped. They wanted to take revenge for our grandfathers' resistance. (Interview GD, May 27, 2019)

Participant GD brings together some interesting elements of history, economy, and politics in his effort to justify why Megali Panagia's anti-mining group follows this specific political strategy based on network commoning, unlike other villages in the municipality. He projects a dissatisfaction and scepticism towards the Greek State and the way state authorities have treated different villages in the municipality. As former American ambassador to Greece, Paul Porter (2006) noticed, the inability of local communities in Greece to trust state authorities, and the way in which the State has treated different communities, has fueled a general political dissatisfaction, low election turnouts, as well as the discouragement of many people against finding meaningful ways of political engagement without the fear that state authorities would see political participation as hostile to their interests. The authorities' fear of popular participation beyond elections and party politics became a rule to the Greek political landscape, to the point that many commoning efforts seemed to be a direct threat to political parties.

During the period 2011-2015, the commoning assemblages in Ierissos, such as the nursery school and the Christmas Village, were initiated in response to the efforts of the pro-mining state authorities in encouraging the establishment and operation of the large-scale mining assemblage in Skouries. While some of the participants in these two assemblages have expressed a dissatisfaction towards the state authorities at the time, they did not necessarily dismiss the importance of institutional politics in the process of preventing large-scale mining in Skouries. One of the reasons for not dismissing institutional politics has to do with the power dynamics within these two assemblages.

Unlike in Megali Panagia, Ierissos anti-mining group was open to a diversity of ideologies and participant understandings. One of my participants noted that some conservatives inside the Committee of Struggle once mentioned: "*Stop talking about capitalism and anti-capitalism, all we care about is saving our village from destruction, not changing the world*" (Interview AL,

May 20, 2019). To my understanding, this is a phrase of particular significance because it expresses two things. First, caring about protecting the environment and the society is not necessarily something related to a particular ideology. Second, the success of these commoning assemblages was based on the identification of a common enemy, the pro-mining state authorities. The ability to find a common ground amongst a plurality of alternative political concepts and visions of development signifies that people have become aware that the problem the local community faces is bigger than the individual interests. The two commoning assemblages in Ierissos are the outcome of an understanding between participants that caring for and protecting their land from destruction can include different individual interests, despite each person's party preference, class awareness, and ideological orientations.

The nursery school has been embraced and accepted as a collective effort by almost everyone in the anti-mining community. At some point, even state authorities realized the value of the efforts of the local population. For example, while the mayor at first perceived the anti-mining community's efforts in building the nursery school as a hostile action; after some time, he realized that the local community could complete the task without funding from the mining company: "*We wanted to show everyone that we could do it without the money from the mining company. The mayor did not believe us, but we proved him wrong*" (Focus Group 2, May 2, 2019). This was a collective effort that points to the fact that collective care can unite people who are not only connected through ideology. However, the realization of the anti-mining community that collective care and volunteer work could produce positive outcomes for the local population, without depending on the mining company, would challenge the dominant political narrative of that period. There is a possibility that pro-mining state authorities have understood that collective care could threaten the economic and political status quo and eventually lead to political change.

Like the nursery school, Ierissos Christmas Village started as an effort to create a collective space of care for culture and for the young members of the anti-mining community. This is a cultural village constructed not only in opposition to the one in Stratoni, but also as a symbol of reclaiming significant social spaces that state authorities had allowed mining companies to expropriate. This place managed to attract people from all across the municipality through collective care. Its popularity was a success of content, and proof that the local community could create social institutions without economic support from mining companies. Between 2011 and 2015, the anti-mining community had been doing everything possible to challenge the state authorities' decision to privatize parts of public life, to reject the dependency on economic resources provided by mining companies, and to reappropriate social institutions in order to bring unity and joy to the local population. As some previous researchers have argued, such commoning

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examples demonstrate an effort by the anti-mining community to regain autonomy from the dependency on mining (Calvário et al., 2017; Fotaki & Daskalaki, 2020).

The effort to break free from mining would not be complete without a concrete political strategy for the municipality that could give flesh and blood to a future without mining. The commoning assemblage that had aimed to articulate political change is the election assemblage described in the previous chapter. This assemblage encapsulated the demands that had been produced throughout the anti-mining community's commoning efforts since 2011. As with many of the previous commoning assemblages formed in Ierissos, it is an assemblage heavily dependent on an ideological openness, a pluralistic character, and the Ierissos community's ability to mobilize people beyond specific political parties, class interests and ideological affiliations. As one of my participants from Megali Panagia pointed out:

> *Ierissos opened up our struggle to the world. Their apolitical stance attracted many. However, when the effort was at its peak, this stance could not hold, because everyone remembers [their] social-class interests.* (Interview GD, May 27, 2019)

While each of the four commoning assemblages cultivated its own political strategies and visions of development, together they managed to set aside their differences and focus on the collective problems and the common enemy of the time, the pro-mining economic and political complex of forces in power.

As a result, Ierissos' 'apolitical' stance attracted people sensitive to environmental civil-rights issues, people from the political Right who did not want mining to destroy their local businesses, others who were shocked by police brutality, and people from the Left who were consciously against extractivism. This heterogeneous and pluralistic assemblage was constructed upon unity through difference. Its political legacy is the realization that social experimentation could eventually bring political change.

It is important to note that social experimentation can also remain only partial if the political strategy and the conditions are not mature enough for a community to translate all the creative social energy into a vision of political change. As Participant GD pointed out:

> *The political strategy of assembling and connecting only with other social struggles and grassroots movements, as Megali Panagia's anti-mining group did, was not a sufficient strategy for responding to a global investor, international economic*

> *interests, and state authorities that supported large-scale mining*. (Interview GD, November 27, 2019)

My participant recognized that a global problem requires more than connections amongst grassroots movements and commoning assemblages.

The great success of the anti-mining struggle in Skouries is based on the political strategy that had dominated within the anti-mining community. As participants from both Ierissos and Megali Panagia have admitted, the chances of political change improve when already-established institutional political forces can support the visions of a local community. The political strategy of connecting local politics to national politics through SYRIZA would give the anti-mining community the ability to face the problem of large-scale mining under different terms to those of the past. Now the anti-mining community could carry through with their plan because of the political mediator, SYRIZA, which worked as an amplifier and as a translator of a social struggle into a concrete political alternative.

At the same time, it should be recognized that political conditions in Greece were ideal, as SYRIZA was a new left-leaning political party in power. Under this light, 2015 was a promising period for the anti-mining community, with excellent conditions for alliances of power at social, local, and national levels. However, for these conditions to occur, two elements had played a significant role. First, the economic crisis and the political choice the social democrats made to cooperate with the conservatives in the pro-austerity/pro-mining alliance, and secondly, the way that SYRIZA communicated its political plan for the local community. For example, the Greek Communist Party (*Kommounistikó Kómma Elládas* [KKE]) developed a strategy that was unclear as to whether it was for or against mining. KKE openly supported the labour rights of the miners, while also wanting the anti-mining community to declare its pledge to the Party. Unlike KKE, SYRIZA took a clear stance against mining, with the members of the party supporting the anti-mining struggle without asking the community to follow SYRIZA's political platform. This loose connection with SYRIZA was a recipe for success for both the political party and the commoning assemblages around Skouries, which, through the election assemblage, won the local elections and created a bloc of anti-mining forces at local and national levels (Velegrakis, 2015).

The rise of SYRIZA gave a boost to the anti-mining struggle through its promise to shut down the mines once they came into government. Moreover, a few months earlier, around the end of 2014, SYRIZA had supported the community-elected local anti-mining candidate. Within a climate of hope and widespread social enthusiasm, the leftist party became the country's

government, and the local candidate won the local elections in a landslide victory (Velegrakis, 2015). The successful campaign of all the different political stakeholders, meaning the local community and the anti-mining local and national authorities, was based on a focus on the common enemy, the mining assemblage and the pro-mining state authorities. The goal was for the anti-mining bloc to keep asking questions such as which kind of vision of development the community should follow, or of what was going to happen with the miners after the political change. The belief that a future of social, economic, and political autonomy from mining interests could be possible played a significant role in the success of local and national authorities friendly to the anti-mining community. However, after 2015, both SYRIZA and the anti-mining community realized that there were limits to their struggle against an alliance of global stakeholders, both Greece's international lenders (the EU Commission, the EU Central Bank, and the IMF), and the mining company, who remained the expeditious way towards economic growth and, as such, a way to pay off the country's public debt (Meynen, 2019).

The election assemblage provides an important lesson, in that a successful political strategy is based on the pluralism and diversity of alliances between agencies and agents across different scales. Coles and Haro (2019) have referred to this strategy as a 'smart political grid', meaning a multidimensional strategy that includes, for example, social movements, political and social actors, activists, the Church, and the non-human. These actors do not necessarily share the same vision of development or political ideology and, in some cases, might have antagonistic worldviews. However, this internal antagonism should be seen as a precondition for sustaining a vibrant pluralism and, at the end of the day, democracy (Deleixhe, 2018; Mouffe, 2005, p. 3).

The following Figure 8.2 is inspired by Gibson-Graham et al.'s (2013) iceberg graph. The scholars have described the world of diverse seen and unseen economic practices taking place all around us. In my iceberg figure, I present the commoning practices that were supported by state authorities, the livelihood ones that had a primarily economic connection to national and local institutions, and finally, I add the political-commoning assemblages that were challenging the interests and the practices supported by state authorities during the period between 2011 and 2015. The arrows show the different relationships specific commoning assemblages had to each other and to state authorities.

Figure 8.2

Commoning Practices that were Supported by, Economically Approached by, and Challenging State Authorities, and their Supporting Commoning Practices
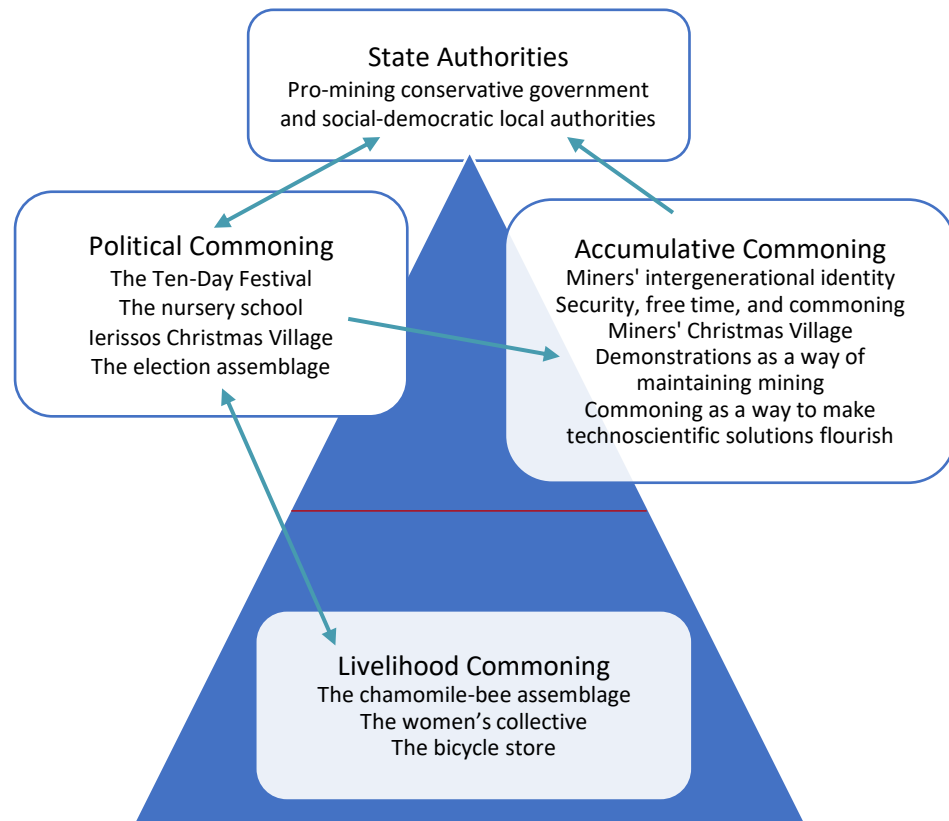
Notes: The arrows pointing from State Authorities to Political and Livelihood Commoning refer to the challenging and economical state relationship to these assemblages.

The arrow from Political Commoning points to the fact that its challenging of State Authorities was also a consequence of challenging Accumulative Commoning.

The arrow that connects Political and Livelihood Commoning shows the interrelation between the two forms of *caring with*.

The last arrow points to the enabling relation between Accumulative Commoning and State Authorities of the period.

Source: Author

8.2.2   The Period between 2015 and 2019

SYRIZA remained in power from 2015 till 2019. During this period, they kept supporting the anti-mining local authorities in Aristotle Municipality. The people who had brought the election assemblage to life had managed to mobilize Greeks from across the world to vote for this political change at a national level. In 2015, SYRIZA received support from an alliance of local citizens and diverse interests with no affiliation to the Left ideology. The only common aspect of

this assemblage of diverse agents and ideologies was their aspiration for creating an alternative economic vision for the municipality. As a former mayor remembered:

> *It was the first time I have seen Greeks from Australia coming to Greece to vote for SYRIZA, and together with us [the anti-mining community], to help change the future of our society. The company's money did not manage to corrupt people this time. In 2015, we had the highest turnout of voters in the modern history of our municipality.* (Interview GZ, November 30, 2019)

While the numbers do not confirm the comment about the highest voting turnout, the fact is that an anti-mining party won the local elections for the first time in the history of the municipality (Velegrakis, 2015, p. 89). In 2015, SYRIZA managed to break the alliance between miners and local businesses. Simultaneously, it attracted the traditional vote, meaning the people who voted for a particular party despite its political program or ideological affiliation to particular class interests. In a sense, SYRIZA revived a perception of politics that is based on contrasting visions, and that of the political as a dimension that can provide actual societal change. In addition to that, another factor in favour of SYRIZA was the fact that the left-wing party had never governed before. Therefore, it has been understood as something new and hopeful that could act differently to the mainstream parties affiliated with corruption and failed economic management (Velegrakis, 2015).

In 2015, SYRIZA, together with the anti-mining-community local authorities, would try to put forward their plan to shut down the mines. Within the first few months of the new state authorities being in power, both the government and the local authorities realized that their effort to shut down the mines was a more complex and delicate matter than they had expected it to be. The new government would have to confront the European Union and the International Monetary Fund, meaning the directives to which the country was indebted, the High Court of Greece, and the miners whose livelihood and level of economic and social prosperity had been, and still was, directly entangled with mining. 2015 to 2019 was a period during which they experienced a clash of two basic narratives: the narrative that prioritized jobs and economic growth over the environment, and the one that prioritized the environment over mining jobs (Hovardas, 2020).

Eventually, the newly elected state authorities at the national and local level had to reconfigure their strategy concerning the mining investment, but they also had to face the anti-mining community and the promises they had made to the community prior to their political victory. The way in which the new state authorities have responded to the different forms of commoning assemblages around Skouries provides an important lesson for both the limitations of

current institutional politics and the ideas local communities have about how efficient political change could occur.

8.2.2.1 State Relation to Accumulative Commoning. After the anti-mining state authorities came into power, the miners and Eldorado Gold stakeholders were in shock. The interests of these groups were under threat of termination, and there was a danger of a new round of unemployment for the local community. Accumulative commoning was also under threat of being terminated by the new authorities. During the period of radical political change, however, the tension escalated, leading to miners demonstrating against the new local authorities, and targeting the town hall in Megali Panagia. A group of miners surrounded the town hall and blocked anyone who wanted to access it (Mega TV, 2015). The local town hall's picket lasted a few days until the miners realized that the new local authorities did not plan to make radical changes to their lives. SYRIZA and the local authorities decided not to breach their relationship with the mining community.

A few months after SYRIZA came into power, the Minister of the Environment realized that the agreements with Eldorado Gold that the previous governments had made could not be simply rejected. The government decided to start a legal process to find out if they could renegotiate the agreement with the mining company (Alevizopoulou, 2017). In addition to that, the Greek High Court was pressing the government to proceed with the mining investment in respect of its benefits for the national economy, despite its negative environmental impact (National Herald Staff, 2020). Despite SYRIZA's promises to the anti-mining community prior to the elections, the new government's decision to explore their options managed to allay a significant amount of the tension amongst the members of the local community. On one hand, the miners kept their jobs, continuing the smoothening preparations for the operation of the mining assemblage. On the other hand, SYRIZA moved the anti-mining struggle to a legal level, since its political intentions had proven incapable of stopping the mining investment. As a result, in the period between 2015 and 2019, the social tension between the mining and the anti-mining sides reduced significantly. By following this strategy, SYRIZA also allowed the mining community to maintain its forms of commoning.

By sustaining the economic wellbeing of the mining community, SYRIZA was also encouraging the development of job and livelihood security, and the improvement of free time for the miners' families. When the leftist party realized that there was no concrete alternative vision to follow, and that they could not terminate large-scale mining in Skouries, the government decided to delay decision-making. The anti-mining community realized that the alternative to

large-scale visions of development were not grounded on existing structures, and that large-scale touristic investors were not willing to take over the economic landscape from large-scale mining. Within this environment, the anti-mining state authorities had limited options. All those different relations that had seen large-scale mining dominate in the area were difficult to quickly dissolve. The newly elected local authorities did not want to degrade the quality of services and the conditions of life in the mining villages, but rather to redistribute resources so that the non-mining villages benefited. Since there were no feasible alternatives during that time, local authorities and the leftist government asked the local community to wait. As a former mayor noted:

> *The goal for us [the new local authorities] was to make a plan where each village [would] get equal chances of development. Our strategy shifted from the elimination of mining to redistribution of resources between the different local communities. The question that became prevalent was how to find the resources to do that.* (Interview GZ, November 30, 2019)

The new local authorities did not want to cut ties with or mistreat the mining communities, but to reduce the dependency of the municipality on the mining company. That, however, required a different economic strategy.

In the years of its governance, the left-wing government managed to obtain funding from the European Union, which allowed the new mayor to invest in infrastructural projects for the non-mining villages of the municipality. The goal of this funding was to close the gap between mining and non-mining villages.

The Christmas Village in Stratoni is another example of the successful maintenance of accumulative commoning between 2015 and 2019. This commoning assemblage continued operating in the same way it had before the newly elected state authorities got into power. As a cultural event constructed upon collective care and volunteer work, it has been positively embraced by the local authorities. The funding from the mining company had continued through all the years that the anti-mining authorities were in power. The new town hall decision-makers have tried to be more open to and embrace all kinds of cultural events in the municipality. Even continued funding from the mining company for such an event has not been considered a hostile action by the new state authorities. As the previous mayor pointed out to me:

> *We [the local authorities] wanted to encourage all cultural activities in our municipality. Whenever we thought that the mining company could play a positive role for the community, we allowed them to do so. What we wanted to change is*

> *their interference in the future of our community.* (Interview GZ, November 30, 2019)

The Christmas Village in Stratoni has survived all the different authorities in power through the years. The change of state authorities in 2015 did not have a significant effect upon it.

Parallel to the concerns about the viability of the large-scale extraction and the economic benefit to the national and local economy, SYRIZA was not convinced about the viability of the rehabilitation plans of Eldorado Gold. The primary concerns of SYRIZA were that previous rehabilitation programs had not provided the results the mining company were suggesting they would produce. As described in Chapter 5, Olympias village's rehabilitation project has nothing to do with a holistic restoration of the local ecosystems to their pre-mining status. Furthermore, there is insufficient data to prove that large-scale technoscientific techniques can restore environmental equilibrium. Within this frame, SYRIZA decided to re-evaluate the mining company's business plan and required further assurances from the company about their environmental plan. The new government wanted to know in detail that the destruction of the environment would be compensated and that the investment would profit the Greek State (ToVimaTeam, 2015).

The re-evaluation of the mining company's environmental and technical assessment brought considerable uncertainty to the miners and their families. "*The miners were afraid for their jobs and social benefits. To tie the miners stronger into the mining activity, Eldorado Gold has invested a lot of money to convince miners about its corporate responsibility and the prospects of green growth with the end of the extraction*" (Participant Observation 2, May 10, 2019). The company devised an extensive campaign to convince the local community that the developmental prospects of the after-mining period would be even bigger than with mining itself (Eldorado Gold, 2014b). Consequently, the leftist government's efforts to renegotiate the company's environmental plan have also been perceived as a threat to the interests of those dependent on mining.

The left-wing governments' decision to find another way to deal with the large-scale mining investment in Skouries resulted from the realization that many people from the local population would become unemployed. Almost half of the population, three generations of miners living and contributing to the development of their communities, could lose the means of their livelihood. This could lead to many economic and social problems in these communities (Lifo, 2017).

The radical political choice would be between terminating an investment that would possibly lead to long-term environmental destruction, social instability, the decline of economy and health, or sustaining the wellbeing of the mining population while trying to find other ways of checking the viability of the large-scale investment. However, the High Court of the country had already decided that the mining investment was, according to a reading of the constitution, of national priority and economic benefit (National Herald Staff, 2020). In other words, the Greek High Court prioritized the recovery of the national economy at the expense of the local environment in Skouries.

SYRIZA decided to ease local tensions by ensuring that the miners would not lose their jobs and social benefits. However, all these delays, and the process of re-evaluating the mining investment, made the miners lose confidence in SYRIZA's strategy. The failure of state authorities to provide a concrete alternative economic-development vision for the miners contributed to the fall of both the national and local anti-mining authorities. Overall, during this period, nothing radical happened. Miners continued receiving their social benefits as they had before the leftist government came into power.

SYRIZA's strategy and reasoning behind taking legal steps against the mining investment has one more element that we should consider. The rationale the Greek High Court followed was also based on the economic conditions of the country at the time. Greece, a bankrupt country, was subject to austerity programs in order to pay back its debt to its global lenders. To make it clear, Greece was a state in economic emergency (Agamben, 2010). In such exceptional circumstances, the negative effects on the environment were considered secondary to the speculated economic benefits a large-scale investment could bring to the country. The Greek High Court used this reasoning and the constitutional element to trap the leftist government into the path that previous governments had chosen for the country. Within this hostile political environment, the effort of the left-wing government in delaying the operational process by raising questions about the legality of the procedure's investment seemed the best way for SYRIZA to gain valuable political time towards supporting the local community (Kadoglou, M. [@antigoldgreece], 2015; ToVimaTeam, 2015). So, despite the good intentions of the left-wing government, the economic constraints set by the country's global lenders, and the synchronization of state legal institutions with the international agents, limited the political potential of the SYRIZA. The realization that the nation-state is no longer the agent of agents that it had been in the 19th and 20th centuries is not yet widely understood, by neither politicians nor local communities. Political alliances across scales and institutions appear to be crucial in responding to problems, with their manifestations

being of multiple scales and also challenging the dominant role of an alliance of global interests preoccupied with economic growth.

In both periods – 2011 to 2015 and 2015 to 2019 – miners' assemblages have received attention from state authorities. Despite the different economic-development visions of the authorities in the two distinct periods, and despite the tensions that arose in 2015, miners' assemblages existed in relative stability. No state authority was eager to condemn miners to unemployment, neither to cancel the dreams of generations of finding a stable job, living safely next to their parents, and contributing towards the local economy and society. In that sense, a change in state authorities did not lead to a radical break from how decision-making had taken place in the past.

8.2.2.2 Livelihood Commoning and State Authorities: An Economic Relationship.
SYRIZA's relationship with livelihood commoning was no different to that of the pro-mining state authorities. SYRIZA's local politicians understood livelihood assemblages as economic-development opportunities for the municipality as an alternative to mining (Malama, 2021). In an ideal scenario, livelihood assemblages, together with economic activities like fishing, logging, tourism, and farming, could become the dominant economic vision for the local community (Citizens' Coordinating Committee of Ierissos against Gold-Copper Mining, 2019; SoSHalkidiki, 2013b). The idea of redesigning the municipality's economic development predominately around small-scale assemblages was something familiar to SYRIZA's economic logic (Malama, 2021).

When SYRIZA and the anti-mining local authorities came into power, the women's collective and the bicycle assemblage had already been widely recognized and accepted by the local community for their contribution to the anti-mining struggle. For example, the women's caring efforts to set up a local business promoting local delicacies; to be at the forefront of the construction of the Christmas Village in Ierissos, and to contribute with food and supplies during the demonstrations, made this group of people a point of reference for the anti-mining struggle. The same applied to Participant PE and the youngsters, who taught the local community to respect the Skouries Forest and showed older generations the economic and athletic benefits to the local community produced by preserving and caring about the surrounding environment. The bicycle store and the women's collective are two assemblages that had more to give to the anti-mining authorities than to take from them. They became the living proof that an alternative economic model had already started rooting within the local community. The plurality of the livelihood activities and commoning assemblages was already there. These activities and assemblages just

needed the economic and institutional framework in which to operate in order to help them become an alternative productive model in the municipality (Malama, 2021).

With SYRIZA in power, collective-caring activities found new ways to flourish. The left-wing government's strategy of not shutting down the mines allowed miners to try out the local products from the women's collective, or to participate in athletic and recreational events through the bicycle assemblage. For example, the women's collective could now focus on the maintenance and expansion of the production line by selling products to miners' families. Having more people coming and trying out the collective's delicacies meant more funds for the business. In addition to that, through European programs for the development of local businesses that the left-wing government promoted, the women's collective managed to improve the quality of services and the infrastructures of their business. Overall, the general social stability and new sources of funding allowed livelihood commoning, like the women's collective, to flourish even more than before.

As with the women's collective, the bicycle store is a commoning assemblage that continued to flourish when state authorities friendly to the anti-mining were in power. PE managed to receive state funding that he used to further develop the service provided to the youngsters and to help them participate in various bicycle competitions across Greece and globally. "*I am looking for some options to participate in the Balkan cycling games this year*" (Interview PE, November 30, 2019), he noted. Local authorities realized that the bicycle assemblage had great potential to bring fame to the village and improve the wellbeing of the local youth, while also teaching them an alternative way of viewing Nature. Under this light, the local community embraced the bicycle assemblage. The local authorities undertook efforts to make the municipality the first bike-friendly area in Halkidiki so as to attract a particular kind of tourism related to biking and trekking (Ethnos, 2020). At the same time, the bicycle assemblage rejected funding from Eldorado Gold, accusing the company of trying to manipulate and divide the local population through bribing to promote its own interests (Cycle 365, 2018).

The discussion so far confirms that the model of economic growth around small-scale network commoning was not something unfamiliar to the political insight of the anti-mining state authorities of that period. Yet, an economic model based on network commoning cannot respond to two things. First, the complete transformation of one economic model to another requires more than a simple political decision. The transition itself requires time, the formation of new institutions that will help connect the small-scale assemblages into one concrete economic base, and the protection and re-education of those moving from mining towards other economic

activities. Also, let us not forget the inability of the leftist government to unilaterally terminate the mining investment.

The second element in this discussion is that, even if SYRIZA were to have decided to terminate large-scale mining and go against the High Court of Greece, the government would also have had to convince the country's global lenders about the viability of an alternative vision of development for producing fast and steep economic growth. This discussion can go much further and even lead to one of the basic questions of modernity, of how autonomous the modern state is in deciding its economic, political, or even geopolitical role in a world full of interconnected agents with unequal power. The anti-mining community and SYRIZA had to deal not only with a national or a local audience, but also with the pressure of international stakeholders upon which the Greek economy depended.

In addition to the points above, Professor in Politics Marina Prentoulis (2021) has noticed that, although leftist parties like SYRIZA, or Podemos in Spain, or the Labour Party in England, include in their rhetoric the importance of promoting a loose connection with social movements and commoning assemblages, when in power they fail to support these in the way they should. At least in the case of Greece, the scholar has noted, the heavy centralization of the nation-state plays a crucial role in weakening local initiatives and their creative energies (Prentoulis, 2021), because it discourages institutional access to bottom-up politics and limits material resources coming directly from the welfare system through taxation. Recently, the Greek conservative ND government passed a new law that has put more obstacles in front of local communities, discouraging the plurality of local political initiatives even further (Liberal, 2021). The logic behind the new law is that polyphony blocks progress and investments and therefore should be limited (Aftodioikisi, 2021).

However, during the period 2015-2019, when the anti-mining local and national authorities were in power, and more specifically in 2018, the leftist government tried to change the local political landscape by attributing more authority to municipal authorities by introducing simple majority (Autodioikisi, 2021), a law that would improve the prospect for collaborations amongst local political formations and parties. However, that political strategy will not benefit livelihood-commoning assemblages like the chamomile-bee, the women's collective, and the bicycle store. The commoning assemblages will remain at the margins of the local political system, and all the values and collective-caring processes produced within them will remain outside the mainstream representative decision-making. In other words, whatever is collectively produced in livelihood-

commoning assemblages will not find direct political influence within the mainstream political institutions.

While ideally livelihood-commoning assemblages could constitute a broad network of activities that could form an alternative economic model of development, the structures and the ability of state authorities to do so have not been there. The highly globalized economies of today, together with the fragility of the economic structures of states like Greece, do not encourage small-scale network solutions as an economic alternative that can match up, for example, to large-scale tourism or large-scale mining. In other words, the plethora and plurality of commoning activities such as chamomile picking, and beekeeping, the production of local delicacies, and the environmental trips to Skouries Forest, together with economic activities such as small-scale tourism, logging, fishing, and agriculture, could not yield the national results needed to sustain the economy of the country.

As pointed out so far, the productive commoning activities could not persuade the sum of the local population that they could provide the same extensive benefits and working security as the large-scale mining can. To respond to this problem, a local politician argued that "*if we [the local community] want to develop an alternative economic model, we have to look into large-scale tourism. That is a way to replace mining and cover the job-loss caused from stopping mining*" (Interview AP, May 4, 2019). This example was a popular alternative supported by many local businesspeople, since it had been the dominant economic model of Greek governments for decades. The popularity of this alternative shows that many people in the municipality have been concerned about an economic model that is solely dependent on a diverse small-scale economy – especially when the national and international demands at the time were about fast and steep economic growth. As I have shown in Chapters 6 and 7, small-scale commoning assemblages operate spatially and temporally slower than assemblages preoccupied with economic growth. The inability to shut down the mines would eventually lead to the abandonment of alternative visions of development for the municipality and the re-election of the pro-mining state authorities into power in 2019.

From 2015 to 2019, the new state authorities' strategy for easing the community tensions did not disturb the livelihood commoning examples of my case study. On the contrary, in cases like that of the women's collective and the bicycle store, the new state management has provided the grounds for these commoning assemblages to flourish further. The chamomile-bee assemblage continued operating undisturbed as part of a group of traditional community activities, including fishing, agriculture, and logging. However, while these livelihood-commoning assemblages have

been understood as pieces of an alternative vision to mining development, some people have raised concerns that they could counterbalance the benefits of the large-scale extractive investment. The relations between political commoning and the newly elected state authorities differ from the previous two forms of communing assemblages. In the next section, I present political-commoning assemblages and their relationship to state authorities, one by one.

8.2.2.3 Political Commoning and State Authorities. The Ten-Day Festival was one of the most resilient political-commoning assemblages, because of how the members that organized it were connected through ideological coherence and a sense of solidarity. Megali Panagia's anti-mining community was fast to realize that the new government faced difficulty in fulfulling its promise to the anti-mining community in shutting down the mines. "*The government told us that they would close the mines down, we believed them, but we still have not seen anything*" (Participant Observation 2, May 10, 2019). The tension and the frustration in Megali Panagia rose, and their political commitment to the government was not strong enough to hold them back. In addition to that, the anti-mining community had more problems to deal with. The previous conservative government had managed to prosecute many anti-mining members from both Ierissos and Megali Panagia villages as terrorists (Brock & Dunlap, 2018). Based on these two factors, great disappointment arose. With this disappointment, and the psychological exhaustion from years of struggling, Megali Panagia's community distanced itself from the one in Ierissos.

Megali Panagia's group started reconsidering its commoning strategies by focusing more on its own network of connections with anti-capitalists and radical-left groups. The group decided to stay away from the collective decision-making amongst the other anti-mining groups like the one from Ierissos. After the failure of SYRIZA to shut down the mines, Megali Panagia's group decided that they wanted to avoid cooperating with the anti-mining groups that continued to support the efforts of the left-wing government. A participant from Megali Panagia mentioned that "*To me, the dilemma from now on is how to develop our [commoning] strategies without governments, the European Union or other institutions*" (Participant Observation 1, March 16, 2019).

During the years that the left-wing government was in power, the Ten-Day Festival remained a space for networking with other social movements, as well as for collecting the money needed for the judicial processes in support of the prosecuted people within that group (Alfavita, 2014).[1] This was a period when the solidarity amongst the different anti-mining groups was fading away. Yet, the legal component continued without losing its intensity. In Megali Panagia, the solidarity between the anti-mining members was strong, with the community managing to support all of its prosecuted members. One of the participants in Megali Panagia observed: "*We are well-organized here. We always manage to support our comrades. In Ierissos, they made mistakes and now they can't even help their members*" (Participant Observation 5, December 14, 2019). I have also confirmed my participant's point by talking to a prosecuted member from Ierissos village. The coherence and the solidarity amongst the members of Megali Panagia have been strong enough to help the group overcome its problems and continue their commoning as assemblages and activities. However, after they had been disappointed with the left-wing government, Megali Panagia's community started focusing on supporting other social movements with their own unique struggles. For example, the members of the Megali Panagia group managed, through commoning assemblages like the Ten-Day Festival and support from other social movements, to collect the money needed to help the prosecuted group members pay off their fines to the Greek State and be released from parole. Another example is when Megali Panagia's group collected money for social groups in Northern Greece who were helping refugees create a decent life in the country. Because of such activities, Megali Panagia's anti-mining group received recognition from public figures such as Manu Chao. The following Figure 8.3 shows the photo taken of the anti-mining group and the famous singer.

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[1] Since 2012, the anti-mining community had faced legal prosecutions as an outcome of an arson event in Skouries. Commoning activities and formations of assemblages concerning the prosecutions of anti-mining members did not stop at any point. After the division of the anti-mining community, each group began to focus on the people who were connected to either the specific ideologically affiliated group, or to the village of origin.

Figure 8.3

Solidarity in Skouries with Manu Chao

Image has been removed as it contains copyright material.

Source: Participant KS

Unlike Megali Panagia, Ierissos anti-mining group split in two. Hopeful emotions have been replaced with psychological exhaustion, mistrust, and anger amongst the members. In Ierissos, one could hear two main lines of thought. One expressed a more tolerant stance: "*As a businessman, I know a little more than others about how the economy works. I never expected the new government to be able to shut down the mines, because the country is indebted*" (Interview GS, May 18, 2019). My participant meant that, since this investment has been presented as economically profitable for Greece's indebted national economy, it would have been impossible for any government to shut it down. In such cases, the protection of the national economy takes priority over the protection of the natural environment. This was also the logic behind the decision of the High Court of Greece when it rejected the left-wing governments' efforts against the large-scale mining investment (Naftemporiki, 2019). Another calm approach was: "*SYRIZA did not fulfill its promise to us, but the way the new government treated the company was far different from the way the previous government treated the investment*" (Interview KE, May 14, 2019).

The people who took these stances remained faithful to the collective body the community had set up. This would now be named 'The Old Committee of Struggle' by the people in Ierissos.

The second group of perspectives was sharper and more confrontational. One person pointed out: "*The government fooled us; they say to us to wait. We do not want to wait any longer; we had enough of this game*" (Interview MAR, May 16, 2019). Similarly, another participant declared: "*SYRIZA told us bullshit! Everyone involved with social movements knows that no government will ever support our cause*" (Interview VK, May 30, 2019). Disappointment and despair began to dominate, and hope was fading away together with the anti-mining community's appetite for commoning. These people would form what they have now called 'The Youth Committee of Struggle' in Ierissos.

Despite the internal divisions, the economic exhaustion and the psychological collapse, the legacy and functionality of many commoning assemblages that had been created in the previous period was still very vibrant. For example, the anti-mining local authorities have supported the nursery school by providing the facility with the required tools for its operation and maintenance. Since the Greek State owns the nursery school, it is also the guarantor and the guardian of the curriculum, the hiring of staff, and the employment of the educators. As mentioned in Chapter 7, this is a commoning assemblage where we experience the direct entanglement of state authorities with the practices of the collective care and solidarity that were forged amongst the volunteers, the educators, and the children, who experience the difference in approach of their teachers towards education, compared to other schools across the county. For example, teachers in the nursery school try to teach children how to care for each other, instead of imposing an attitude of competition and individualism. This is a process that enriches State institutions' operation, with values deriving directly from the local community to which they ascribe (Vercellone, 2015).

Ierissos Christmas Village was one of the commoning assemblages that had been negatively affected while the anti-mining authorities were in power. The left-wing Greek government did not deliver its original promise to the anti-mining community to shut down the mines, leading to division amongst the different anti-mining groups within the municipality. The feeling of enthusiasm and joy that had helped the anti-mining community to set up the Christmas Village was no longer there. Its place had been taken by shock and disbelief about the abilities of the new government.

While the beginning of the new local authorities' term was intense and hopeful, it ended tragically. As my participants pointed out, "*Six months after the new mayor got elected, and under*

unknown circumstances, he resigned. He then got replaced by another member of the anti-mining community who was going to be the mayor for the next few years" (Focus Group 4, December 7, 2019). Speculations about his resignation had been circulating for a long time. The most popular had been that the businessman realized that he did not want to support a cause he did not believe in, that of having no clear vision of development for the municipality. "*As long as the mining investment was remaining, he might have felt that he could not promote an alternative economic vision*" (Interview KE, May 14, 2019). This phrase reflects what many people believed was the reason for the former mayor's resignation.

However, the anti-mining group from Ierissos who had remained friendly to the left-wing government realized that state institutions, although unable to shut down the mines, could still promote some of the commoning participants' demands. Some examples would be the demand for better infrastructures in the anti-mining villages, and the prospect of a reorganization of municipal economies in a way that would disentangle them from the mining companies operating in the area. A few years later, with the support of the left-wing government, local authorities would manage to achieve a level of economic independence from the mining company. As one participant mentioned:

> *It is the first time that our municipality, despite the difficulties caused by the disentanglement from the economic dependency [on] the mining company, manages to put public economics in order. SYRIZA helped us [the municipality] by providing some European funding to develop local projects for improving social infrastructures and services, like collecting the trash.* (Interview LP, November 28, 2019)

My participant's statement confirms that some of the main demands that had been part of the discussion within commoning assemblages have been put in place by the elected local authorities and supported by the leftist government.

The relationship between political-commoning assemblages and state authorities was quite messy and complex. On one hand, the State failed to deliver its promise to the anti-mining community to shut down the mines, and it failed to create the platform for the construction of an economic model of development based on, for example, network commoning or large-scale tourism as an alternative to one based on large-scale mining. On the other hand, some of the political demands that had been borne, articulated, and maintained within political commoning assemblages have been considered, adopted and implemented by local and national authorities.

This discussion points to an essential ontological element, that of autonomy. In a sense, even the idea of voting for national authorities does not have the same value as it had in previous centuries. There are fundamental limitations posed upon national government on economic and social grounds. Having said that, I would not underestimate the struggle a national government has in creating a welcoming environment for commoning assemblages to flourish. National governments can play a crucial role in the way they safeguard civil liberties and constitutional rights (Prentoulis, 2021; Vercellone, 2015; D. Wall, 2017). In addition to that, there are still essential differences between how national political parties see and understand agency and democratic participation within the domain of the nation state. Under this light, electoral politics can still play a vital role concerning the design of societies, the institutions, and the tools that can be created to support local communities in their struggles.

SYRIZA might have failed to create the conditions that would allow for an alternative vision of development for Aristotle Muncipality, but, at the same time, they did not oppress commoning in the way the conservatives and social democrats before them had. SYRIZA was not as visible or as violent or as oppressive towards the anti-mining community and did not respond aggressively to the anti-mining community's disappointment with the government. Although there had been some incidents with the police during the first few months after the left-wing government came into power, that stopped shortly afterwards (SYRIZA Youth, 2015). One of the grave mistakes of the leftist government in its relationship with livelihood- and political-commoning assemblages was that, while they had stopped attacking people, they had then urged them to leave the matters in the hands of the official authorities, confusing the anti-mining community. A participant told me: "*I was urging everyone to do something creative, but they ignored me. They had lost their common purpose*" (Interview GS, May 18, 2019). GS openly stated that what had united the anti-mining struggle before had now gone.

Together with physical and economic exhaustion, the disappointment towards the left-wing government created a feeling of passivity that led to the abandonment of many commoning assemblages. "*We [the anti-mining community] could not believe that they treated us like that. We invested so much into electing them*" (Focus Group 2, May 3, 2019). This comment signifies that, for many people, especially in Ierissos, the limit to their political activity was the delegation of authority to an already-established political body. In a sense, the Greek political legacy was still alive within the local social body. The Party was still in the mind of many people as the basic path towards political change. On the other hand, SYRIZA reproduced this paternalistic stance by encouraging people to wait, and to stop both protesting and commoning. In other words, there was

a mutual disablement between state authorities and civil society, which imposed specific limits on their own respective political actions.

The outcome was that neither the anti-mining community nor the left-wing party worked within a collective understanding of how *commoning-as-caring-with* and state institutions could work together to reach the common goal, that of changing the economic model of the municipality. Instead, SYRIZA cultivated the idea that a government in power would constitute enough force to shut down the mines (Schmitz, 2017). Unavoidably, some people developed extremely high expectations for the political abilities of a national government within a globalized and highly complex world of power dynamics. Under this light, the anti-mining community lost not only their common enemy, which had allowed *commoning-as-caring-with* to flourish, but they also lost hope in a government friendly to the anti-mining struggle. As a result, the pro-mining national and local authorities took back political power at the end of 2019.

Conclusion

In this chapter, I have focused on the two significant phases of the anti-mining struggle in Aristotle Municipality. During these two phases, some assemblages had remained relatively intact, others had further flourished, and many had faded away. The change of state authorities had been primarily negative for the political assemblages presented in the chapter. State authorities had developed a more problematic relationship with political commoning than with the other forms of commoning, firstly through aggression, and secondly through disillusionment.

The accumulative commoning cases, presented analytically in Chapter 5, had been established and encouraged by both the mining company and state authorities in both periods, because these are commoning examples that reproduce and maintain the status quo. More explicitly, these are assemblages that do not question the economic model that Greek governments and local authorities have promoted for decades (Velegrakis, 2015). Even the authorities friendly to the anti-mining struggle had failed to challenge the dominance of mining in Aristotle Municipality. Therefore, accumulative commoning has been considered by state authorities to be the form of commoning that helps the local mining community maintain good living conditions.

Livelihood commoning is the kind of commoning that operates under the radar of political power. While it carries the seed of political change, it does not always express it directly. Instead, what is more easily observable in livelihood assemblages is their economic and educational character. We have seen these two dimensions in the bicycle shop and the women's collective.

Other times, it is more about the lively connections that connect the social to the material world, projecting the attentiveness required to maintain relations, and presenting the elegant ways in which life is entangled. Such is the case of the bee-chamomile and the women's collective. The intensity of these assemblages did not change significantly within the two different political periods. What changed were the conditions within which these assemblages operated. The social stability the anti-mining authorities provided allowed livelihood assemblages to flourish further.

The political forms of commoning did change; many faded when the anti-mining government took power but failed to prevent the mining operation. The authorities, friendly to the anti-mining community, discouraged political commoning. While there are political efforts, especially from the Left, to change the existing political culture in Greece, there is no comprehensive vision that would allow political commoning to flourish. In that sense, there is both a restraining and a liberating dimension to the relationship between commoning assemblages and state bureaucracy. Without a reconstruction of the relationship between commoning assemblages and party politics, commoning responses to problems related to the Anthropocene epoch will not reach their full potentiality.

Consequently, the bigger problem remains. On the one hand, we have interests that prioritize economic growth; in my case, extractivism expressed through large-scale mining. These interests appear to be based on an alignment between state and private interests. That, however, contributes to the production of the negative effects of the Anthropocene epoch. On the other hand, we know that *commoning-as-caring-with* can contribute to the mitigation and amplification of some of the negative effects of this new epoch. How can we then amplify the positive effect of commoning while protecting and nourishing democratic institutions? More specifically, in the final chapter I ask the question: Can state authorities operate in ways that help *commoning-as-caring-with* to flourish, and to amplify its potentiality in the Anthropocene, in a democratic fashion?

Chapter 9:
Where Do We Go From Here?

In this concluding chapter, I return to the primary question that has shaped this research project: How can we mitigate Anthropocene-related problems while also allowing democratic politics to flourish? To respond to that question, in the first section, I discuss the broader contributions of this thesis, particularly the problematic challenge in amplifying the potential of commoning assemblages through connections with governing institutions. Having presented the main thesis contributions, in the second section I highlight some promising pathways for further research. Finally, I end the chapter with an open-ended conclusion about the political possibilities that commoning can provide for the future of democratic politics in the Anthropocene.

9.1   Thesis Broader Contributions

The research questions that frame this project have functioned as a provocation for thinking through the various ways of responding to the negative effects of the Anthropocene while maintaining and enriching democracy. While my thesis does not pretend to answer this question in full, it does add to the debate. Exploring ontology and praxis, I have sought to push the boundaries of previous research and bolster existing knowledge about commoning assemblages. I have followed this path based on three observations. First, commoning assemblages can enable a plurality of values to emerge and flourish (Gibson-Graham et al., 2016; Zapata Campos et al., 2020). In that sense, it responds to calls of this epoch for an open and contestable ontological standpoint. These values are essential for responding to the problems of the Anthropocene. The second observation derives from Elinor Ostrom's (2015) observation that commoning assemblages are laboratories of democratic experimentation that can enrich democratic institutions (as cited in Kioupkiolis, 2019; D. Wall, 2017). Finally, the thesis supports existing work on the ongoing methodological experiments in human geography and political science that recognize more-than-human agency within research and assemblages based on the commons (Bastian, 2017; Country et al., 2015; Edwards & Fenwick, 2015; Steele et al., 2019). In this section, I discuss some of the ways in which this thesis contributes to expanding existing literature on these themes. In this endeavour, I also consider practical recommendations for enabling a new relationship between

state authorities, private initiatives, and commoning assemblages that can help respond to Anthropocene-related problems.

9.1.1 Thesis Contributions

This thesis has responded to recent efforts in the environmental humanities to de-centralize humans and research differently by rethinking the "world as projects of human and more-than-human inhabitation" (Dowling et al., 2017). The exploration of responses to problems related to the newly suggested geological epoch, the Anthropocene, led me to adopt a theoretical standpoint that encourages greater attentiveness to non-human agency (Abram, 1997; Barad, 2007; Bennett, 2010; Latour, 1993, 2004; Tsing et al., 2017; Whatmore, 2002). The Anthropocene is the epoch within which human and non-human agency have entangled to such an extent that it is no longer possible to consider one without the other (Carrington, 2016; Tønder, 2017, p. 129). It invites humans to understand the various non-human agencies that are co-constructors of our common worlds (Latour, 2004; Tsing, 2015). The invitation to understand the entanglement of human and non-human differently in the Anthropocene requires a change of politics that differs from the previous geological epoch, the Holocene (Dryzek & Pickering, 2019).

In order to explore a different kind of politics that is fitted to the Anthropocene, I adopted a new-materialist perspective constructed upon weak ontological thinking. I argued that the new-materialist response provides better chances for maintaining democracy in the Anthropocene while also responding to the problems related to this epoch. There are three reasons for that. First, new materialism allows for a diversity of ontologies and responses to co-exist, without the need for eliminating alternative ones. For example, this understanding refers to the co-existence of the post-Marxist, the Promethean, and the dystopian ontologies presented in Chapter 2. Following the weak ontological understanding, new materialism allows space for contestation, contingency, and curiosity. Second, a new-materialist ontology aligns with the Anthropocene commitment to the inclusion of non-human agency in our effort to understand and construct the world around us. Third, new materialism projects an affirmative-hopeful reading of the present mundane world. It is an ontology that draws influence from empirical cases that show that the world around us is not just a gloomy place, but that there is also hope – multiple agencies in the here-and-now – in the Anthropocene (Head, 2016). I have adopted this hopeful and dynamic lens to develop my interpretation of commoning.

In Chapter 3, I showed that commoning is a complex set of relations working within diverse political principles, and that it can incorporate non-human agency (Bresnihan, 2016a; De la Cadena, 2010, p. 346; Gibson-Graham et al., 2016). In that sense, I positioned myself within a

tradition that understands commoning as assemblages of humans and non-human agents. Commoning refers to a plurality of practices that can bring to life a world of many worlds (Escobar, 2018, 2020). That point is based on numerous empirical studies, from Indigenous activism to the anti-globalization movement that respond to mundane problems by putting into action different cosmologies, creative energies, and forms of knowledge (Escobar, 2018, 2020; Gibson-Graham, 2008; Whyte, 2014). Commoning, similarly to new materialism, refers to an affirmative change in the present. Empirical examples of that are collective practices across the world that effectively respond to local manifestations of a global character, problems such as biodiversity loss, soil erosion, water depletion, and reduction of carbon dioxide in the atmosphere (Cooke et al., 2019; Gibson-Graham et al., 2016; Grear, 2020; Papadopoulos, 2012; Zapata Campos et al., 2020).

The new-materialist understanding of commoning opens up a new way of thinking in politics. Commoning as a relational concept brings to light the importance of the different values that emerge through practices of collective care that bind different agents and agencies together (Bresnihan, 2016a; Gibson-Graham et al., 2016; Parris & Williams, 2019). The plurality of values refer to solidarity, trust, reciprocity and convivial living (Askins & Blazek, 2017; Midgley, 2016; Power, 2019; Tronto, 2013). Collective care, according to political theorist Joan Tronto (1993, 2013, 2015), comprises five stages of care. These five stages are: caring about someone, taking care of someone, caregiving, care-receiving and *caring with*. The fifth one, that of *caring with*, refers to the form of collective care that destabilizes the dominant value in modern societies, that of care for endless economic growth. *Caring with* brings into light the importance of values such as solidarity, reciprocity and conviviality. It is the political form of care that can be found in commoning assemblages and that reflects the ontological commitments of new materialism. Thinking of commoning as assemblages constituted upon *caring with* means also creating possibilities for improving the conditions of living well within this new epoch, without putting at stake civil liberties and individual freedoms.

However, Tronto noticed that not all forms of collective care are *caring with*. There are forms of care that can accelerate the negative side of the Anthropocene by prioritizing economic growth (Papadopoulos, 2012; Puig de la Bellacasa, 2017; Tronto, 2013, 2015). Under this light, not all commoning assemblages are beneficial to reconfiguring the Anthropocene. To better understand which assemblages have the capacity to contribute to the mitigation of Anthropocene-related problems, I turned to the three-dimensional frame of care presented by Emma Power (2019). The three dimensions are the socio-material, the spatial and the temporal – with specific commoning assemblages inhabiting different but interlinked socio-material, spatial and temporal

spheres. Some of these are connected to processes of Anthropocene change, while others operate to slow or resist that change.

New materialism and commoning encourage democratic responses through their theoretical and practical commitment to pluralism. Regardless of what a commoning assemblage contributes to, it is the plurality of different values and the participants' exposure to them that enforces a kind of openness, contestation, and contingency. It is as if participants are exposed first-hand to a political struggle and then have to practice the politics they envision. In that sense, a new-materialist understanding of commoning embodies, in principle, what political theorist Chantal Mouffe (2005) calls 'agonistic politics'. This means a political ethos where political opponents become aware that the image of reality each one supports is partial and therefore contestable and open to new interpretations, understandings, and articulations. Commoning is then a praxis that can infuse politics with a new democratic ethos, because participants in commoning assemblages are exposed to everyday pluralism through their practices. My exploration of new materialism, commoning, and democratic analysis has rarely been connected and investigated in the literature.

In my empirical chapters I brought this lens to investigate three types of commoning assemblages that have emerged in the shadow of the Anthropocene. In Chapter 5, I focused on the process of smoothening socio-material relations spatially and temporally to create a sterilized environment directed only towards the extraction of valuable metals. More specifically, I referred to the goal of the large-scale mining assemblage in Skouries, of creating the ideal conditions for extracting valuable metals by discarding all relations perceived as a disturbance to the smooth mining process. The extraction of valuable metals signifies a productive activity that endlessly pursues the accumulation of economic growth. This vision of development understands space and time as opportunities for exploitation and economic profitability. This includes commoning practices that support the effort of smoothening. The commoning cases I presented in Chapter 5 show that part of a local community was entangled intrinsically and dialectically with mining. This, in the long term, contributes to the destabilization of the very environment that sustains life for the local community. By doing so, I pointed out that not all forms of collective care contribute to the mitigation of Anthropocene-related problems.

In Chapter 6, I explored the livelihood assemblages within the case-study area. By showing attentiveness to the socio-material, spatial and temporal terms of the interactions of different agents in commoning assemblages, I have pointed out that such assemblages can substantially contribute to the democratic politics of the Anthropocene. Waters, trees, the soil, seasonal fruit,

humans, the air, bees and chamomile, and many more, are respected and recognized within commoning assemblages. Listening and adjusting to the unique spatial and temporal needs of non-human elements requires slowness and care, providing a rationale to resist the temporality driven by economic growth. Instead, there is respect for the capabilities and the time frames that different participants within an assemblage can contribute. Furthermore, livelihood assemblages can carry the seeds of political change. Although they do not always express or articulate a political project, what they contribute towards is maintaining the conditions that sustain life in the specific area of my case study. Their political potentiality can unfold in two ways. First, their political potential can emerge in defence of their own existence. And second, their members may choose to join political assemblages. That means participants of a livelihood assemblage can transfer knowledge, create new identities, promote alternative developmental visions, and infuse new values within other commoning assemblages.

In Chapter 7, I examined how political-commoning assemblages openly challenge the rhythms and politics of the economic growth derived from large-scale mining. Different political assemblages, for example, the Ten-Day Festival and the election assemblage, actively try in different ways to articulate an alternative development vision for the municipality. The major findings concerning political assemblages in my case study are three. First, political assemblages have emerged to actively contest the establishment of large-scale mining in Skouries. In this sense, they are connected to the mining assemblage, frustrating the smoothening process. The second finding is that political commoning was successfully activated through the materialization of a common enemy. To support the common struggle against the common enemy, participants temporarily placed aside the differences in their visions for the future. While some people supported large-scale tourism as a dominant alternative, others advocated smaller-scale fishing, beekeeping, farming, and logging for the local community. Finally, the limits of political commoning have in part been defined by the relationship between the commoning participants and the different political authorities, who were successively for or against the anti-mining struggle during different periods.

At the same time, I also pointed out that not all forms of commoning contribute towards Anthropocene-related problems in the same way. While commoning as practices of collective care exist in every social terrain, they are messy; some contributing negatively to the Anthropocene epoch. In that sense, the political contribution of care is not always positively directed towards the mitigation of global problems. Furthermore, caring relations are not always supportive and nurturing, as they encounter divisions amongst those participating.

In Chapter 8, I focused on the relation of the various forms of commoning to different governments and local authorities in Aristotle Municipality. I have shown that different political parties treat various forms of commoning disparately. For example, despite the ideological and political differences of the various state authorities in particular periods, all of them showed an enabling and encouraging attitude to the forms of accumulative commoning that contributed to establishing the local community's dominant economic-development vision. A lenient stance towards livelihood commoning has also been held by different state authorities, as they did not immediately or obviously threaten the status quo. In many ways they were largely invisible, despite being of significance to their supporters and participants.

In contrast, different governments have had disparate impacts on political commoning assemblages. From 2011 to 2015, the goal of political commoning was to translate social commoning activities into a political alternative to large-scale mining. That happened through the election assemblage. Through this assemblage, for the first time, anti-mining local authorities were elected, and together with the left-wing government that came to power a few months later, they tried to deal once and for all with the large-scale mining investment. The failure of SYRIZA to shut down the mines as promised before the elections led to multiple divisions within the anti-mining community. During this second period, many commoning assemblages faded away. People started questioning again if trusting a government was the correct strategy, or if they should continue on their own. There is both a restraining and a liberating dimension to the relationship between commoning assemblages and state bureaucracy.

The end of Chapter 8 brought me back to the fundamental question of the thesis: How do we amplify the benefits of commoning within the Anthropocene? This question becomes more complex when states like the Greek State treat forms of commoning in a hostile and paternalistic manner. Many state authorities in Greece see political-commoning assemblages as a threat to their interests (Hadjimichalis, 2014; Klein, 2008, 2014; Tsavdaroglou & Kapsali, 2014). Even when not hostile, political institutions and political stakeholders are often late to recognize the value of particular forms of commoning. For example, many institutional reforms that were borne through social movements and commoning assemblages can take decades to be put into place (Gibson-Graham et al., 2016). However, the Anthropocene equation also poses a question of urgency. How can political institutions be encouraged to recognize the value of commoning, and how can that recognition be translated into political action, sooner rather than later?

Unfortunately, this is a question that no one person or thesis can solve. Societies need to be brave enough to accept that economic growth should not be the dominant rationale that defines

politics. It might be that some political agents will be more courageous than others in making decisions that will bring new life to democratic politics, while others will decide not to. After all, politics always involves a certain level of risk and contingency. A key insight from the discussion of my case-study chapters is that there are *already-existing* examples within society where forms of democratic politics exist – within commoning assemblages – that can inform broader political processes and institutions. Respecting these local, cultural, and historical contexts can allow a diversity of bottom-up responses to inform different scales of decision-making processes in ways better-suited to the contingencies of the Anthropocene.

My thesis does not chart a definitive way forward. Instead, my goal is to suggest that societies explore already-existing examples of political and livelihood commoning in order to inform democratic politics in the Anthropocene. As I have shown, the main problem is the domination of political positions, closed ontological systems, and stances of life that are preoccupied with economic growth. This economic logic, although not absolute, has dominated current democratic institutions and decision-making processes (Polanyi, 2001; Puig de la Bellacasa, 2017; Tronto, 2013). My understanding is, then, that the domination of this logic and the ontologies needs to be challenged. This bears the questions: How do we challenge that? And what is the role of commoning assemblages in this exploration?

9.2   Some Insights for Practice

The thesis demonstrates the need for practical strategy that will help to amplify the strengths of commoning assemblages within democratic politics in the Anthropocene. On this front, I am invested in the idea scholars Romand Coles and Lia Haro (2019) have suggested: "We should create a smart grid that cultivates alternating energy currents from a plurality of agents". Coles and Haro suggest that the answer to politics in the Anthropocene lies in pluralistic assemblages that utilize the collective energy of a multiplicity of different agents. The 'alternating energy currents' sound like an invitation for engaging with what a new-materialist approach to commoning stands for – an openness to different value systems, forms of knowledge, practices, and worldviews. In addition to that, the reference to a 'plurality of agents' indicates a heterogeneous assemblage of human and non-human agents where each one can contribute something new and unique to the Anthropocene problem-solving process. This strategy does not exclude commoning assemblages that are dependent on economic growth. Instead, the logic is that all different assemblages – as, for example, livelihood, accumulative, and political – should have equal access to political decision-making processes. That kind of pluralism encourages and exposes the possibilities and limitations of different value systems, and provides a more diverse

toolbox of responses to Anthropocene-related problems. For example, it means that our faith in technology should be partial and not absolute, that we should also explore other social responses to Anthropocene problems.

Under this light, one might ask the question: Is commoning an important strategy for responding to Anthropocene-related problems? The answer to that is 'yes' and 'no'. In line with some of my participants' points, and from what other scholars have noticed from their research, individual social experimentations alone are radically insufficient to respond to global challenges such as climate change or neoliberalism (Buck, 2015; Coles, 2016; Coles & Susen, 2018; Connolly, 2017). Commoning assemblages can provide isolated responses to local problems, but they cannot stand alone in responding to Anthropocene-related problems.

What societies need to do is to become more attentive to state-commoning relations, to better understand the importance of economic growth in decision-making processes, and to engage with the different spatial and temporal needs of the commoning participants – even if this engagement means challenging longstanding tradition, norms, and well-established social and personal identities. My suggestion is that we need to train ourselves to listen to, attend to, and engage wholeheartedly with different value systems, and to do that, we need to infuse all social and political institutions with what some commoning scholars call 'the act of thinking with difference' (Gibson-Graham et al., 2016; Parris & Williams, 2019; M. J. Williams, 2020).

What, then, are the necessary conditions for infusing political institutions with the values generated within different commoning assemblages? My suggestion is that we need two things. First, state institutions need to find ways to nurture and make room for different commoning assemblages, despite the fact that state and commoning assemblages' value systems are often not the same. The logic behind this suggestion is that, in principle, the diversity of values nurtured in commoning assemblages should be able to counterbalance the dominant influence economic growth has on political decision-making processes. Engaging with and unraveling the complexity of relations between economic growth and other values nurtured within commoning assemblages will help us to better understand how to be attentive to the unique socio-material relations amongst human and non-human agents in particular contexts. My suggestion, that state institutions rethink their relationship with those commoning assemblages that challenge the dominant faith in economic growth as a mode of progress, is driven by my belief that this can be a vital step towards developing a successful strategy towards mitigating the negative effects of the Anthropocene and reducing the pain of the damages produced as a result of human-made crisis.

However, as I have shown in Chapter 8, state authorities often fail to support forms of commoning that have the potential to mitigate the negative effects of the Anthropocene epoch. How do we then attract political institutions to invest in different commoning assemblages, and how can we ensure investment does not disrupt those assemblages? My second suggestion follows the argument of Bollier and Helfrich (2019), that commoning assemblages need to maintain a partial independence from state or market institutional control to preserve their unique ability to respond differently to mundane problems without falling into the bureaucratic loops. As shown in my case study, there is no guaranty that different state authorities will not try to retract their trust from commoning assemblages, and that they will not utilize police or paramilitary groups to suppress social initiatives. Therefore, as Bollier and Helfrich point out, commoning assemblages should remain semi-autonomous from the control of state or market institutions. This strategy could provide relative protection and rights against police brutality. As Elinor Ostrom (2015) has eloquently noticed, the State needs to allow commoners to govern themselves (p. 90). Under this light, commoning assemblages need both institutional protection and operational freedom from State interference. This could also contribute to an effort to minimize paternalistic relations between state authorities and commoning. As history has shown, the threat of the retraction of democratic rights and freedoms is always imminent. The Anthropocene epoch will make this awareness more intense.

As a closing note, I would like to point out that state authorities in all different historical-cultural contexts can develop viable relations with commoning assemblages (Linebaugh, 2008, 2014; Vercellone, 2015). Thinking of politics in the Anthropocene through a new-materialist perspective means being hopeful that affirmative action can happen, and that the future is always open to a new relationship between current political institutions and commoning assemblages. A democratic future in the Anthropocene needs to enrich current political institutions with a plurality of values and assemblages other than those preoccupied with economic growth. In this endeavour, commoning assemblages might provide a vital political tool. However, as I have shown, state-commoning relations are unstable and sometimes unpredictable, so must be approached with care and mutual respect.

Overall, my thesis advocates for the institutional protection of commoning assemblages within the nation-state frame and, wherever is possible, in collaboration with private and international stakeholders. For example, in my case study that would mean that, despite the institutional commitments of state authorities to global and national stakeholders, commoning assemblages should have the ability and the state protection to undermine, override, and possibly challenge state bureaucracy and market institutions that prioritize economic growth. That could

lead to a development of a culture of negotiation between a plurality of values, acceptance of confrontation as part of the democratic value system, and the cooperation of stakeholders with different value systems. Commoning assemblages have the ability to respond to Anthropocene-related problems by putting forward collective care, attentiveness to non-human agency, ground-based knowledge produced in local communities, and other approaches that are currently missing from dominant political responses and narratives. A very recent example projecting the importance of commoning assemblages was the 2021 summer fires in Greece. The cooperation of the local population, volunteers, market initiatives, and state authorities produced significant results concerning the preservation of land, the protection of properties, and animal welfare. The importance of cooperation between state authorities and commoning assemblages in fire containment has been well-documented at governmental level since 2019 (Goldammer et al., 2019). Overall, my suggestion is that commoning assemblages need institutional tools, economic and technical support, but at the same time they should be granted operational autonomy in order to protect themselves and their value systems from the bureaucracy and extra-institutional oppression that can occur at every turn of the political struggle.

9.3   Pathways for Future Research

While this thesis shares some stories of the political, affective, and ethical potential of different commoning assemblages in the Anthropocene epoch, there is much more research to be done on specifying the ways in which commoning assemblages can enrich democratic institutions within this new geological epoch. More work is needed to draw out the different ways state authorities and private institutions can work together with commoning assemblages in diverse spaces and time frames. I hope that the new-materialist approach to commoning assemblages developed in this thesis might be taken up as a tool by researchers and applied to other contexts.

This thesis engages a particular group of people around Skouries of Halkidiki, Greece, who self-selected to take part. Similarly, there is a pluriverse of communities and commoning assemblages for investigation that can help to further unpack the heterogeneity and contingency of commoning assemblages across the globe. Future studies might seek to tease out how various social groups explore the formulation and development of mobilization strategies for overcoming barriers of communication and institutional cooperation between state authorities, international stakeholders, and commoning assemblages.

The participants interviewed suggested some significant differences in the commoning experiences in the period before and after the change of state authorities. There is a need for more

research on how constructive and respectful relations can be built between State and commoning assemblages, without the State overly influencing those assemblages; instead the influence should flow the other way. Finally, in examining the role of embodied experience, this thesis has highlighted how not all commoning cases increase the potential for mitigating Anthropocene-related problems. Further examination is needed of the kinds of encounters and conditions that are best for shifting accumulative commoning into forms that promote a different relationship with the non-human environment. This would also be valuable for different stakeholders in understanding the significance of local forms of knowledge, and how to give more attention to agencies and values that are often overlooked by assemblages preoccupied with care for economic growth. This approach would allow for the development of more democratic responses to Anthropocene-related problems.

Conclusion

This research project contributes to evolving discussions about what it might mean to develop a new relationship between different commoning assemblages and state authorities in response to Anthropocene-related problems such as extractivism. I am interested in commoning as a means of encouraging and linking the mundane world, which is synthesized by human and non-human activities and processes, towards a democratic politics that could enrich our political system in its efforts to respond to global-scale problems. The logic that we can continue responding to Anthropocene-related problems without challenging the idea that we need to keep producing economic growth, undermines the very foundations of liberal democracy (Bollier & Helfrich, 2019). This thesis is not about returning to some imagined, idolized past idea of 'humans into nature', but about envisioning different ways of negotiating contemporary global challenges, and helping to actualize opportunities for creating democratic responses to them. By pointing out that it is unproductive to try to respond to the challenges of our times without questioning the idea of relentless economic growth and the assemblages that support it, I seek to demonstrate that the solution to this monoculture might lie in the existing value systems and forms of collective care already being practiced in commoning assemblages. My overall suggestion is that we need to listen differently, to become attentive to values and diverse agencies, and to encourage the forms of collective care that counterbalance the dominance of forms of being and care that are preoccupied with endless economic growth. This is a phenomenal democratic exercise that could enrich our sensitivity to the world around us and make our worlds more liveable, democratic and convivial for us all.

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Phone:
Email:

Chief Investigator's / Supervisor's Name & Title: <u>Associate Professor Andrew McGregor</u>

Participant Information and Consent Form

Name of Project: "Commoning in the Anthropocene**:** *Responding to large-scale mining through practices of collective care. The case of Skouries, Halkidiki, Greece.*"

You are invited to participate in a study about community responses to social, environmental and economic challenges in Skouries. The purpose of the study is to improve understandings about community practices that emerge in response to changing social and environmental contexts. The project seeks to develop knowledge that can further understandings about grassroots initiatives and innovations that may have value here and in other places. We want to learn from your experiences.

The study is being conducted by Ioannis Rigkos, who is a Cotutelle PhD candidate involving Macquarie University of Australia and the University of Copenhagen, Denmark. The project is being conducted to meet the requirements of PhD Candidature under the supervision of Associate Professor Andrew McGregor () at the Department of Geography and Planning at Macquarie University. At the University of Copenhagen Ioannis is supervised by Lars Tønder (), who is an Associate Professor at the Department of Political Science.

Ioannis Rigkos is a PhD candidate at Macquarie University, Australia and the University of Copenhagen, Denmark. This research project is officially authorized and ethically approved by both Universities. The universities are subjected under their national laws.

If you decide to participate, you will be asked to participate in either one-on-one interviews approximately of thirty minutes to one-hour length or informal focus-group discussions approximately 45 minutes to one-hour sessions. With your permission interviews and discussions will be recorded and copies of photographs taken. There is low risk concerning this case study. The length of participation is maximum six months. However, in case of any discomfort participants have the full right to withdraw from the research at any given time. Participants in informal group discussion groups will receive a small compensation for their participation to the research in form of a gift.

Any information or personal details gathered in the course of the study are confidential, except as required by law. The names of the participants will not be used unless there is clearly given consent from the specific participants. No individual will be identified in any publication of the results.

COMMONING IN THE ANTHROPOCENE

Pseudonyms will be used throughout the entire research. You will have access to the collected data regarding you upon request. You also have the right to withdraw any personal information at any given time.

The data will be only accessible to Ioannis, the researcher. No other person will have access to the collected data. In the case that you give your consent, the anonymous collected data can be used for future research after the researcher having received renewed approval from the Human Research Ethics Committee.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

I, _____(participant's name) have read (or, where appropriate, have had read to me) and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name:_____
  (Block letters)

Participant's Signature: Date:_____

Investigator's Name: Ioannis Rigkos _____
  (Block letters)

Investigator's Signature:_____Date:_____

☐   Request for an Executive Summary of the Findings to be delivered by

     Email:_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

If you have further concerns and questions please contact Aristotle University Assistant Professor Alexandros Kioupkiolis, Department of Political Science. E-mail:_____
Tel: +

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)

Appendix II

Questions Posed to Participants

General questions posed to participants in the face-to-face interviews, follow ups and focus groups

- Can you give some information about the context of the anti-mining struggle (how did it start)?
- Can you remember and discuss some commoning practices related to the struggle?
- What is your relation to the environment around Skouries?
- Can you reflect on the possibilities and limitations of these practices?
- How did the miners respond to the anti-mining struggle?
- What was the role of state authorities towards the anti-mining struggle?
- How do you see the future of the struggle?
- Other information that you consider important to mention?

Face-to-face (one-on-one) interviews

Personal involvement with commoning
- How long have you lived around Skouries?
- Please tell me about your role in alternative economic or grassroots activities – ie activities that take place outside normal capitalist relations (prompt collectives; sharing economies; community mobilization; community kitchens; community gardens)?
- Why did you become involved?
- What have you gained from your involvement?
- Do you consider it to be a successful initiative? Why / why not?
- What do you think are the strengths and weaknesses of these initiatives?

Range of commoning practices
- Do you know of other grassroots or alternative economic practices in Skouries?
- Do you know how and why they formed?
- Why do you think these practices have evolved in this location? Have the effects of mining and other forms of development contributed to these activities?
- Who are the key actors involved?
- What are the goals of such types of activities?
  Are they successful? Why / Why not?
  What do you think are the strengths and weaknesses of these initiatives?
- How has the community benefited from these activities?
- Do you think any of these activities have been particularly innovative in terms of contributing to more equitable societies?
- How are these activities governed and managed? What sort of structures have been set up?

Human-(non-human) relations
- Do these types of initiatives help the communities deal with the social and environmental impacts of mining in the area?

- Are environmental concerns an important component of these initiatives?
  What sort of non-human elements are involved in these initiatives? (e.g. plants, animals, forests, oceans)
  Are any of these initiatives threatened by / or benefiting from mining or other development processes?

Commoning prospects:
- Do you consider any of these practices as providing a more sustainable way of living for the community in the future?
- What do people need to enable these practices to flourish further?
- Are there state or market mechanisms to support these activities and how?
- Do you have any affiliation with other communities across the world who share similar interests?
- What is the importance of sustaining and nourishing such relations?

Commoning limitations:
- What constraints and barriers are these practices facing?
- How can these be overcome?

Focus Groups

History of commoning practices and group involvement:
- Can you tell me something about the history of the grassroots activities that you are involved in?
- What is the purpose and role of these community activities?
- Have they changed through time?

Range of commoning practices:
- Can you mention key actors that are involved in these community practices?
- Can you describe to me some of the everyday strategies that you use to keep these activities going on?
- Do these activities promote a sustainable way of living? (If yes) Can you explain how?
- Is local production an important factor for the sustainability of your community's wellbeing?
- Many people have pointed out the need for support from outside the community, is that true? How do you achieve that?
- What kind of support is that and how is it sustained?
- Is voluntarism an important aspect for achieving community goals?
- What forms of volunteering support do you experience so far?
- Do people participate or affiliate with other communities that somehow are related to the community in Skouries?
- What is the role of non-human elements in your grassroot activities?

Commoning prospects:
- Can you see this relation with other groups as essential for the sustainability of your community goals?
- What are the prospects according to your understanding, for these community activities?
- What are your expectations from these community activities for the future?

Commoning limitations:

- Which constraints and barriers do these practices face? How do you protect these practices from the abovementioned constraints and barriers?
- Are there state or market mechanisms to support these activities and how?
- Do these grassroot activities comply with the interests of the nation state and the market?

Final Remarks

- Do you want to add anything that you think we haven't covered?
- Is there anything you'd like to add about the research or interview?

Appendix III

Participant Basic Information

Interviewee's Code	Informant's Sex	Informant's Profession	Interview Date
Int 1 AN	Female	Farmer	a. 28/11/2018 b. 20/1/2019
Int 2 AP	Male	Politician-Architect	a. 14/3/2019 b. 4/5/2019
Int 3 GVN	Male	Farmer-Cattle Breeder	a. 16/5/2019
Int 4 GS	Male	Cheese factory owner	a. 18/5/2019
Int 4 ATH	Female	School teacher	a. 1/6/2019
Int 5 STP	Female	University student	a. 16/3/2019
Int 6 RI	Female	Retired	a. 13/3/2019
Int 7 MK	Female	Physicist	a. 17/5/201
Int 8 Focus Group 1	Female	Women's collective owners and volunteers	a. 13/3/2019
Int 9 Focus Group 2	Female	Women's collective owners and volunteers	a. 3/5/2019
Int 10 Focus Group 3	Female	Women's collective owners and volunteers	a. 21/5/2019
Int 11 Focus Group 4	Female	Women's collective owners and volunteers	a. 7/12/2019
Int 12 Focus Group 5	Female	Women's collective owners and volunteers	a. 12/12/2019
Int 13 VK	Male	Construction worker	a. 30/5/2019
Int 14 LP	Female	Hotel owner	a. 28/11/2019
Int 15 GVE	Male	Store manager	a. 20/5/2019
Int 16 THA	Male	Construction worker	a. 28/11/2018
Int 17 MK	Female		a. 27/05/2019
Int 18 ML	Female	Women's collective owner	a. 19/5/2019
Int 19 AL	Female	Women's collective owner	a. 20/5/2019
Int 20 GD	Male	Farmer-Construction worker	a. 27/11/2019
Int 21 Participant Observation 1	Mixed	Farmers, Beekeepers, Construction workers, Self-employed, Animal breeders	a. 16/3/2019
Int 22 Participant Observation 2	Mixed	Farmers, Beekeepers, Construction workers, Self-employed, Animal breeders	a. 10/5/2019

Int 23 Participant Observation 3	Mixed	Farmers, Beekeepers, Construction workers, Self-employed, Animal breeders	a. 17/5/2019
Int 24 Participant Observation 4	Mixed	Farmers, Beekeepers, Construction workers, Self-employed, Animal breeders	a. 27/11/2019
Int 25 Participant Observation 5	Mixed	Farmers, Beekeepers, Construction workers, Self-employed, Animal breeders	a. 4/12/2019
Int 26 KP	Male	Geologist	a. 11/12/2019
Int 27 PE	Male	Bicycle store owner	a. 19/5/2019 b. 30/11/2019
Int 28 GVN	Male	Retired	a. 16/05/2019
Int 29 MAR	Female	Public servant	a. 16/5/2019 b. 5/12/2019
Int 30 KS	Female	Shop owner	a. 10/5/2019 b. 25/5/2019
Int 31GZ	Male	Former mayor	a. 30/11/2019
Int 32 SP	Female	Journalist	a. 11/12/2019
Int 33 GKA	Male	School teacher	a. 22/5/2019
Int 34 KE	Male	Shop owner	a. 14/5/2019
Int 35 ND	Female	University student	a. 18/5/2019
Int 36 EIR	Male	Public servant	a. 3/5/2019
Int 37 MR	Female	Private sector employee	a. 17/3/2019
Int 38 TD	Female	University student	a. 31/5/2019
Int 39 THE	Male	Hotel owner	a. 11/3/2019
Int 40 DV	Female	University student	a. 3/5/2019
Int 41GIO	Female	School teacher	a. 16/5/2019
Int 42 ER	Female	Environmental activist-Hotel owner	a. 12/5/2019
Int 43 GL	Male	Retired	a. 15/5/2019
Int 44 ANI	Female	Retired	a. 4/3/2019

Source: Author

Arts Subcommittee
Macquarie University, North Ryde
NSW 2109, Australia

MACQUARIE
University

13/05/2019

Dear Associate Professor McGregor,

Reference No: 5201932958665
Project ID: 3295
Title: Exploring Commoning in a Time of Global Crisis

Thank you for submitting the above application for ethical review. The Arts Subcommittee has considered your application.

I am pleased to advise that ethical approval has been granted for this project to be conducted by Ioannis Rigkos, and other personnel: Dr Miriam Williams, Dr David Baker, Emeritus Professor Richard Howitt, Prof Lars Tonder.

This research meets the requirements set out in the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018).

Standard Conditions of Approval:

1. Continuing compliance with the requirements of the National Statement, available from the following website: https://nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018.

2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol. You will be sent an automatic reminder email one week from the due date to remind you of your reporting responsibilities.

3. All adverse events, including unforeseen events, which might affect the continued ethical acceptability of the project, must be reported to the subcommittee within 72 hours.

4. All proposed changes to the project and associated documents must be submitted to the subcommittee for review and approval before implementation. Changes can be made via the Human Research Ethics Management System.

The HREC Terms of Reference and Standard Operating Procedures are available from the Research Services website: https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics.

It is the responsibility of the Chief Investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Should you have any queries regarding your project, please contact the Faculty Ethics Officer.

The Arts Subcommittee wishes you every success in your research.

Yours sincerely,

Dr Mianna Lotz

Chair, Arts Subcommittee

The Faculty Ethics Subcommittees at Macquarie University operate in accordance with the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018), [Section 5.2.22].