#STOPADANI: THE LANDSCAPE OF ENVIRONMENTAL ACTIVISM IN AUSTRALIA

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Table of Contents

Abstract 3

I. Introduction 4
#StopAdani: The Movement

II. Literature Review 9
Social/Environmental Movements
Australian Climate Movement
Environmental Discourses

III. Research Site 33
Scoping the Territory
Physical Geography
Natural Resources
Human Geography
The Coal Conundrum
Drawing the Battlelines
2019-2020 Bushfire Crisis
Contesting Coal Mining

IV. Methods 52
Environmental Impact Statements
Interviews
Social Media Posts

V. Results 56
Adani and the Multiple Scales of Activism
Local Scale
Regional Scale
National Scale
Global Scale
Environmental Discourses of the #StopAdani Movement

VI. Conclusions 77
An Ongoing Contestation
What's the Landscape?
Future Research

References 85

Abstract

Australian grassroots action on climate change is a recent phenomenon. Climate change as an issue of concern entered the political landscape and the national psyche of Australia later than in other countries, but since then there has been a surge of climate action. A grassroots layer of the climate movement has been co-evolving with the proposal of development projects such as coal mines. Australia's grassroots movement consists of concerned citizens seeking to address climate change through personal action by pushing for broader economic, political, and social change. The research produced by this analysis delves into this aspect of climate action in the context of the coal mining industry in Australia, with particular focus on environmental discourses (e.g., sustainable development, environmental justice, green radicalism) characteristic of the #StopAdani movement that has evolved to contest the proposed Adani mine. *What is the geography/landscape of environmental activism in the case of the Carmichael Coal Mine in Queensland, Australia?* I draw on social media data, interview data, as well as important documents and sources from the gray literature to address this question. Analyzing across these various datasets, I show that the Australian grassroots movement against the Adani coal mine has been able to adapt its vantage depending on scale, employing an economy-centered argument about the infeasibility of fossil fuel extraction at the local scale and an environment-focused argument about the injustices of coal mining ventures on the global scale. I also find that while the movement historically engaged with diverse discourses, ideas of environmental justice became more prominent in the movement following the Australian bushfires. Social media data illustrate how Twitter contributes to the dynamism of grassroots activism while also illustrating how important events, e.g., the bushfires, can have a dramatic effect on orientation of activism. The data also illustrate how different framings of the same issue, i.e., the economic unviability of the Adani mine and the environmental injustices of the Carmichael, can have a unifying impact on social movements.

I. Introduction

#StopAdani: The Movement

The Carmichael Coal Mine is a proposed mine in the Galilee Basin in Queensland, Australia. Adani Group is an India-based multinational conglomerate founded by Gautam Adani as a commodity trading business in 1988 (Adani Group, 2019). The Group's diverse profile of businesses includes aerospace, agribusiness, defense, energy, financial services, real estate, and natural resources. Adani Group has annual revenue of over $13 billion with operations at 70 locations in 50 countries (Adani Group, 2019). The development was initially intended to represent a multi-billion-dollar investment; however, Adani announced that the mining operation would be significantly downsized and self-funded after being refused financing by institutions worldwide. The Carmichael was first proposed by Adani in 2010 (Adani Group, 2019). The project was granted initial approval by the Queensland Government in 2014, then official approval by the Australian Government in 2016. The mine would be the first of many mines proposed for the basin, thereby facilitating the further exploration of large-scale development projects in the region (Adani Group, 2019). The Carmichael would be one of the largest coal mines in the world, producing millions of tons of coal a year; the far-reaching extent of the mine in terms of its socio-ecological impacts has been a stimulus for environmental movements such as Stop Adani.

Stop Adani has one goal—as per its catchy name—to stop the Adani Group from building the country's biggest coal mine: "Stop Adani is a grassroots movement of local action groups right across the country, all working to stop Adani's disastrous plans for a dirty new coal mine from going ahead" (Stop Adani, 2019). The mine has drawn immense controversy about its economic benefits, its financial viability, and its environmental impacts. The growing number of controversies linked to the project has resulted in emerging opposition, especially from a community grassroots movement called Stop Adani. The mine has faced opposition from a myriad of grassroots environmental organizations that are allies of the movement to Stop Adani. The movement has been actively involved in campaigns across social media platforms such as Facebook, Instagram, and Twitter as demarcated by the hashtag #StopAdani. Stop Adani is now one of the largest environmental

movements in history: "We are building the biggest environmental moment in Australia" (Stop Adani, 2019). Stop Adani is creating a community of activists who are looking to bring about environmental, political, *and* social change.

Stop Adani is a collection of members who range from local groups working in their community to stop the project from going ahead to national organizations leading campaigns to take action on climate change. Stop Adani has been able to gain its status as the largest environmental movement in history because of the status of its stakeholders, such as the Australian Conservation Foundation (ACF). ACF is Australia's national environmental organization that is an independent, non-partisan organization focused on advocacy, policy, and research (ACF, 2019). ACF has been deeply involved in the movement to Stop Adani for several years since the organization filed a case to challenge the government's approval of the Carmichael (ACF, 2019). ACF claims the purpose of the case was to highlight the country's failure to act on climate change as well as to question the government's representation of the public (ACF, 2019). The Foundation has been successful in raising awareness of the environmental injustices associated with the mine, such as the overlooking of the rights of the traditional owners of the land where the mine has been proposed to be built. Stop Adani has been able to build a network of activists through its collaboration with the ACF: a national organization with the capacity to mobilize individuals across the country.

Table. Timeline of the environmental, political, social, etc. events surrounding the Adani mine controversy: May 2010-Present

May 2010	Adani begins the approval process to establish a new mine and a rail line in the Galilee Basin
July 2014	Adani's proposal is approved by both state and federal governments vis-à-vis Environment Minister Greg Hunt
August 2015	Federal Court rules in favor of a legal challenge by the environmental non-governmental organization: Mackay Conservation Group
October 2015	Australian government re-approves mine subject to "37 of the strictest conditions in Australian history"

April 2016	Queensland government approves mining leases for mine/rail projects
December 2016	State/federal governments provide final approval to rail lines associated with mine
February 2017	Adani's mine is thrown into doubt by a shock federal court decision that threatens to void scores of native title deals across Australia
July 2017	Queensland rules out financial support for the mine amid rumors the company is having trouble raising funds
October 2017	Owners of native title over the proposed site lose a court appeal against the granting leases
December 2017	Government vetoes a billion-dollar federal government loan to Adani for the construction of a rail line
January 2018	Owners of native title over the proposed site head back to court in a bid to halt mine
October 2018	UN scientists say Australia has a chance to save 30% of the Great Barrier Reef if coal burning is phased out globally within 22 years
November 2018	Adani downsizes the project from a 60-million-tonnes a year mine ($16.5 billion) to a 10-to-15 million tonnes a year mine ($2 billion)
December 2018	Adani files a court order to bankrupt an indigenous traditional owner who launched numerous court actions against the project
March 2019	Australian students join a global climate rally demanding the mine be stopped
May 2019	The federal court hears an appeal against Adani's indigenous land use agreement, and then reverses its decision
June 2019-March 2020	Australia experiences its most intense bushfire season to date

Source: *Australian Conservation Foundation (ACF), 2019*

The thesis engages with Stop Adani as an environmental, political, and social *movement* rather than as an environmental, political, and social *organization*; in other words, I engage with Stop Adani as a collective campaign that is centered around grassroots activism intended to stop Adani from building what would be Australia's largest coal mine. The movement was born on social media as a response to the government approval of not only a mine, but also a rail linking the inland mine (Galilee Basin) to the coastal port (Abbot Point) in 2014. #StopAdani is the hashtag that social media users use across multiple platforms, including Twitter, Instagram, and Facebook, in order to contribute to the discussion in opposition to the mine. To date, the movement has focused on: 1) pressuring contractors, 2) defending land rights, 3) exposing Adani's history, 4) escalating peaceful protests, 5) building the movement. Members of the Stop Adani movement view Adani as a company with a questionable track record and highlight the company's past abuses of power in their campaigning.

Stop Adani is noted for the hybridization of "old-school" methods and "new-school" technologies throughout its movement (ACF, 2019). A primary example of the integration of *online* organizing and *offline* action in the campaign is the so-called national day of action on 7 October 2017. The national day of action in which protesters used their bodies and other objects to literally spell out their message (ACF, 2019). The structure of the movement is one of the most prominent features of Stop Adani; in other words, the collaboration between activists in various cities, states, and countries has been integral to the progression of Stop Adani. Stop Adani is itself both a global initiative to solve the problem of climate change and a local campaign to stop the construction of the coal mine (ACF, 2019). The use of digital technology has been an integral aspect of the movement as local groups are able to organize without a central authority overseeing processes from above; for example, the Stop Adani Sydney-based group used social media to promote their national day of action protests which saw over 1,500 people from the local community participate. Stop Adani activists rely on both online tools such as social media as well as traditional forms of communication such as face-to-face meetings to communicate, mobilize, and organize (ACF, 2019).

Focusing in particular on its "new-school" techniques, my thesis explores the Stop Adani movement as a window into grassroots climate activism in Australia more generally. How is such activism being framed, and how are new tools such as Twitter in turn helping to remake activism? The study is organized around the following research question: *How is Australian environmental activism being (re)made/(re)shaped by the campaign to #StopAdani?* The propositions in the basin are not an isolated phenomena, but instead represent a fundamental global struggle whereby increasing production and consumption of carbon-based energy defies the crucial challenge to reverse the growth of anthropogenic greenhouse gas emissions and realign human society towards a more sustainable future. Despite the potentially significant impacts of brand-new coal mines, the controversies in the Galilee Basin have attracted surprisingly little in-depth critical analysis. The research seeks to help redress the analytical gap by identifying and examining some of the environmental discourses surrounding the issue of coal mining.

Stop Adani has on the one hand had a relatively narrow goal of stopping the mine from being constructed; however, the Stop Adani social movement has been able to attract people from all walks of life by linking the Carmichael and the "hot topic" of climate change to myriad issues that range from Aboriginal rights to political corruption to concerns for the localized environmental impacts of coal mining. Stop Adani has been able to provide different framing of the same issue, such as the economic unviability of the Adani mine and the environmental injustices of the Carmichael. Stop Adani activists have also been able to offer a framing that directly challenges the discourses of sustainable development engaged by pro-mining coalitions by drawing on themes of environmental justice—particularly following the 2019-2020 Australian bushfire crisis.

II. Literature Review

Social Movements, Climate Action, and Environmental Discourses

The following review surveys the relevant literature on social movements, grassroots climate action, and environmental discourses in response to climate change. The intent of this threefold focus is to build a foundation for the conceptualization of answers to two broad questions. The first question is concerned with who is included in the grassroots layer of the climate movement in Australia, while the second question asks what is being done as a response to climate change.

I. Social/Environmental Movements

#StopAdani is an activist-centric movement located at the nexus of environment and society; therefore, the campaign is representative of a climate movement *and* a social movement. Papadakis (1993) suggests that environmental issues are the dominant theme of social movements since they call for both political *and* social change. The characteristics of grassroots climate action fall well within the definition of social movements; thus, social movement theory provides insight into how/why social movements evolve over space and time.

Social movements are collective actions that challenge businesses/corporations, individuals, governments/states, etc. to redress problems (Moyer, 2001). The thesis examines the socio-environmental movement of #StopAdani in order to analyze the landscape of climate change campaigns promoted by environmental activists. A social movement is effective only to the extent that the demands are adopted into policies (Dryzek et al., 2003).

Melucci's (1996) definition of social movements demonstrates the scope movements can encompass: "Social movements designate that form of collective action which entails a breach of the limits of compatibility of the system within which the action takes place." Tarrow (1998) further supports the collective identity formation that occurs within social movements: "Social movements are collective challenges based on common purposes and social solidarities in sustained interaction."

Routledge's (1996) contribution is to portray the breadth of social movements as its defining characteristic:

A social movement is a myriad of interests and identities that constitute an analytical and political-cultural terrain of contestation in which the hegemonies of the state, the development project, and the aspects of modernity can be explored, defined, and challenged.

Grassroots climate action falls well within the aforementioned boundaries. Activists have a common purpose in seeking to engage in collective action and yet maintain heterogeneity of interests, ideas, and identities (Connors & McDonald, 2011; North, 2009; Smith, 2007). Grassroots climate actors present challenges to the current socio-economic and political system by proposing ecological limits on growth and questioning core tenets of modernity.

Social Movement Theory

The study of social movements is integral to the analysis of environmental discourses adopted by activists. Social movements as sites of change will continue to increase in relevance as new issues emerge around the debate over economic development and environmental conservation. Jamison (2001), Jamison (2003), and Jamison (2010) argue for the importance of social movements via the case of the alternative globalization movement in relation to climate change. The alternative globalization movement has enabled the emerging articulation of climate justice concerns from local to global scales, which significantly shapes the public debate on climate change and governance arrangements.

Bate et al. (2005) argue that the theoretical understandings of social movements can be categorized into at least three broad schools of thought: collective behavior theory, resource mobilization theory, and new social movements theory. Collective behavior theory privileges the importance of emotion in motivation collective action, while resource mobilization theory privileges the ideas of a rational actor taking part in collective action if the perceived gain from involvement is greater than the actual effort (Wastl-Walter, 2001). Moser (2009) suggests that the environmental activism of the late 1960s heralded a significant change in the many of the strategies of the movements, resulting in new

theoretical understandings, such as new social movement theory. The central claims of the theory include the following:

- The rise of the post-industrial economy is responsible for a new wave of social movement
- The movements are significantly different from previous social movements of the industrial economy

The primary difference between the movements is in their goals as the new movements focus not on issues of economic well-being, but on issues of social well-being, e.g., environmental justice, human rights, etc.

New Social Movement (NSM) theory is the primary theoretical approach employed in this thesis due to its explanatory power of the actors and the practices of social and ecological movements that have arisen in recent years. The theory of new social movements is most relevant to current climate change campaigns by non-governmental organizations (NGOs). NSM theory has often been cited as providing the best theoretical fit with movements concerned with ecological and/or social change (Doyle, 2005; Moser, 2007; Moyer, 2001). Doyle (2005) justifies the use of the theory of new social movements to explore environmental movements by arguing that the theory is not perfect but overcomes many limitations of other theories (**Table 1**). Institutions such as non-governmental organizations provide a social dimension to grassroots activism, which is grounded in a set of common beliefs, customs, or practices. Doyle (2000) suggests that the strength of a movement is dependent upon the connections between the participants of said movement. The theory of new social movements is useful for analyzing responses to climate change because the paradigms of environmental organizations are created through ongoing dialogues between activists.

Table 1. Principles of Dominant Social Paradigm (DSP) and New Environmental Paradigm (NEP)

DSP	**NEP**
Low valuation of nature	High valuation of nature
Acceptance of risk to maximize wealth	Careful acting and planning to avoid risk
No limits to growth	Limits to growth
Compassion for only those near and dear	Compassion to other generations, people, and species

Old politics: emphasis on bottom line and profit, i.e., expert-driven, market-oriented	New politics: emphasis on foresight and planning, i.e., consultative, participatory

Source: *Doyle (2005)*

Moyer (2001) and Dryzek (2005) offer a way to examine how the grassroots layer of climate movement might be directing its message about climate change. Moyer's (2001) work explores the theory and the practice of social movements by integrating studies on climate change and environmental justice. Power is presented in two models—Elite and People, with the capacity of social movements premised on the latter. Social movements are capable of building momentum for change via people power. Movements are considered successful when demands produce a shift in social values (Dryzek et al., 2003; Hall & Taplin, 2006; Moyer, 2001). Dryzek's (2005) work argues that a social movement that effectively addresses environmental change is based on "the capacity to engage in social learning in an ecological context." Ecological modernization is presented as possibly the best option society can hope for, while ecological democracy has the capacity to enable learning (Dryzek, 2005).

Social Movement Activists

den Hond and de Bakker (2007) offer a definition of activism/activist groups that encompasses the social aspects of environmental movements, such as the campaign to prevent further mineral exploitation in the resource-rich country of Australia:

Activist groups emerge out of the need for organization and coordination; activist groups are activist in transforming shared ideals, concerns, and grievances into organized contention, and they are a group in the sense that a collective identity enables them to overcome the problem of collective action.

People collectively generate social movements. Moyer (2001) uses the terms "citizen activist" and "engaged citizen," while Emirbayer and Sheller (1999) refer to "self-organized citizenry" to describe the members of society seeking change. A myriad of terms has been used to describe people engaged in social movement activity; however, the term *activist* will suffice to describe the grassroots actors for the purposes of this thesis. Activists and the activism in which they engage includes a variety of practices. Martin (2007) defines *activism* as action on behalf of a cause: "actions that go beyond what is conventional." Martin (2007) contends that there are both activist *and* non-activist

roles within movements; for example, attending a protest would be an activist activity, while undertaking research on a movement would be a non-activist activity. The distinction between activist/non-activist activity contrasts with definitions of *activism*; for instance, researching advancements in scientific knowledge on climate change and disseminating findings from empirical studies would be beyond the routine of most people. Activism encompasses a broad set of practices—perceiving activism in an encompassing form enables exploration of an array of practices being undertaken by individuals at the grassroots level.

Activists and the movements in which they participate are diverse. Moyer (2001) provides a reference point by identifying activist roles within social movements: *the change agent*, *the citizen*, *the rebel*, and *the reformer*. The roles are considered to be necessary to a movement's success, although each has its own strengths and weaknesses:

- An effective feature of *the rebel* is the possibility of placing an issue on the public radar due to daring, often direct-action tactics, while an ineffective feature of *the rebel* is the likelihood of being overtly disruptive without realistic strategy
- An effective feature of *the reformer* is the ability to use mainstreams institutions and systems, while an ineffective feature of *the reformer* is the preoccupation with organizational and procedural matters at the expense of the movement

Jamison (2003), Hopwood et al. (2005), and Dahle (2007) provide theoretical guides for the categorization and/or definition of the climate activists involved in this study of the movement to #StopAdani.

Jamison (2003) presents several forms of green activism/environmentalism: *community*, *professional*, *militant*, and *personal*, and then describes the contribution each makes to the creation of green knowledge. The community activist is focused on results—on changing policies rather than on changing beliefs; the community activist seeks to empower local groups to effect greater change. The professional activist is pragmatic in his/her approach of working within the system to change beliefs, customs, and practices. The militant activist is overt in his/her ethical, moral, and/or spiritual motivations to bring about change. The personal activist is variegated in his/her inspirations to participate in movements which might include green spiritualism, new ageism, and green consumerism.

Hopwood et al. (2005) presents the actors of movements as aligned with the degree of green change they support. The categories of green change identified include the following: *the status quo* (no change), *the reformist*, and *the radical transformationalist*. Hopwood et al. (2005) along with the previously mentioned theorists acknowledge that these categories can intermingle in the individual activist to achieve objectives of movements:

Some people may say one thing and mean another—as in many political issues. On one hand, activists may tone down their arguments to persuade a government to move along the sustainable pathway. On the other hand, activists may use more radical rhetoric than they really believe to deflect criticisms.

Dahle (2007) describes the ideal types of ecological activists: *reformists*, *impatient revolutionaries*, *patient revolutionaries*, *grassroots fighters*, and *multifaceted radicals*, and then provides illustrative examples of existing green activists. Reformists are willing to work within the system to raise awareness of issues, impatient revolutionaries attempt to bring about the demise of the current system in their quest for an ecologically benign future, and patient revolutionaries are waiting for the perceived inevitable collapse while building skills to assist in its recovery. The multi-faceted radical undertakes personal, political, and social changes as an opportunity presents itself because even if said actions eventually conflict with the paramount objective, the imperative is to maintain momentum of the movement.

II. Australian Climate Movement

Doyle (2000) states that the climate movement has only recently been the subject of research in Australia, a probable consequence of the relatively recent emergence of environmental activism in the country. The environmental movement has been impacted by the dominance of neo-liberal ideology pervading government and society more broadly, which has had a significant impact on the strategy of environmental activists (Doyle, 2010). The Australian movement emerged from a strong focus on concerns over environmental/social justice, which has continued to characterize the movement (Doyle, 2005; Mulligan & Hill, 2001). Doyle (2000) considers the Australian environmental movement to be "the most powerful dissenting social movement in our society, continually challenging both politics and business-as-usual."

Bulkeley (2000) argues that the climate movement in Australia originates from campaigns put forth by climate action actors, such as the Australian Conservation Foundation (ACF)—an independent, non-partisan, non-profit environmental organization focused on advocacy, policy, and research through community organizing. Grist (2008) & McGregor (2004) contend that NGOs are an integral component of social movements; NGOs are change agents, acting where change cannot be achieved by citizens alone through questioning the foundations of the political process. Chatterjee & Finger (1994) believe NGOs transform the political economy through their role of promoting social learning, which leads to a consideration of the social justifications behind environmental movements.

The Australian environmental movement is dynamic, ever-changing. Researchers describe the so-called waves of environmentalism throughout recent history, which is important for understanding why issues framed in a given discourse or ideology are highly contextual. Shellenberger & Nordhaus (2004) describe three waves of environmentalism: the first wave framed around conservation, the second wave framed around regulation, the third wave framed around investment. Doyle (2000) also describes three waves around resource use from the 1960s to present: from unrestrained use to sustainable/multiple use to wise/sequential use; waves of environmentalism connect with recommended strategic responses for the environmental movement (**Table 2**). The waves of environmentalism are useful to consider in an analysis of current campaigns on climate change issues as the paradigm, i.e., wave, determines the discourse with the most potential for achieving change.

Table 2. Periods of environmentalism in Australia

Date	Dominant Ideology	Models	Strategies
1960s to mid-1980s	Unrestrained use	Pluralism/Structuralism	Working with government to lobby for environmental management
mid-1980s to early-1990s	Sustainable and multiple use	Corporatism	Working with government to implement environmental policy

mid-1990s to present	Wise and sequential use	Postmodernism	Working with non-governmental organizations to advocate for environmental protection

Source: *Doyle (2000)*

Green grassroots activism has been the primary focus of research on environmental/social movements. Pakulski & Tranter (2004), Ollis (2008), and Dhakal & Paulin (2009) reveal a terrain of dynamic grassroots movements and circumstantial, lifelong activists consciously selecting strategies with varying degrees of effectiveness. Whelan & Lyons (2005) explain the strategies of the environmental movement working with grassroots groups; for example, the collaboration between environmental non-governmental organizations, e.g., ACF and grassroots environmental movements, e.g., #StopAdani. Whelan (2003), LaRocca (2004), and Dissendorf (2009) describe the motivations behind the participation of activists in green movements, e.g., a sense of responsibility to stand up for one's own belief system as well as the limitations to the experience of activists, e.g., a sense of alienation from others not involved in activism. Baer (2010) concludes that the defining characteristic of the grassroots layer of the climate movement is its critique of global capitalism and its emphasis on social/environmental justice issues.

III. Environmental Discourses

The Australian environmental movement is diverse in terms of the discourses adopted by activists at the grassroots level. An examination of the discourses of the environmental movement is one of the mechanisms used to make sense of the complex, diverse terrain of grassroots activism. Dryzek (2005) employs a discursive approach to understand the many perspectives on environmentalism, including those of people promoting a green agenda. Dryzek (2005) covers green discourses in great detail and offers critiques of said discourses in practice; Dyzek (2005) is particularly useful in exploring the grassroots layer of climate action for this thesis. The framework for this thesis enables the conceptualization of grassroots climate actors through a systematic exploration that situates activists ideologically (**Box 1**). The framework sets out the main storyline of grassroots activism in the context of climate change. The introductory section of this chapter reviews previous attempts to classify green discourses to establish a foundation for this thesis. The following sections then utilize the framework to describe the ends of the green discursive spectrum: the *reformist* on one side, the *radical* on the other.

Box 1. Checklist of elements for the analysis of environmental discourses

1. Basic storylines constructed or created
2. Assumptions about human-nature relationships
3. Social/cultural impact of discourse
4. Change agents and their motives
5. Key metaphors and other rhetorical devices

Source: *Dryzek (2005)*

Theoretical Framework

Dryzek (2005) begins with industrialism—the dominant discourse within modern industrial society—and identifies the various green discourses' responses. The storyline of industrialism refers to the capacity for infinite economic growth, continual technological advancement, and the binding of well-being and happiness to material consumption. Industrialism constructs humanity as separate from nature and nature as existing solely for the use of humanity (Dryzek, 2005). Dyzek (2005) argues that although competing ideologies such as liberalism and socialism are vastly different, the ideas are committed to industrialism via the marginalization of environmental issues. Green discourses provide a space for critical reflection, resistance, and re-imagining of a society that is inclusive of environmental change. The emergence of green discourses in the late 1960s coincided with other changes across the globe, including the rise of new social movements. The challenge presented by green discourses was "a means to speak about the environment that before was not even imaginable" (Dryzek, 2005). Dryzek (2005) contends that discourses have a historic specificity—green discourses are no exception.

Green discourses need to be situated within the contexts in which they evolved. The emergence of green discourses parallels the rise of the *modern ecological impulse*, which was originally dominated by the survivalist narrative of impending ecological limits (Hay, 2002). Survivalism directly confronted the unquestioned tenet of industrialism's promised benefits of unlimited growth. The storyline was of non-negotiable finite ecological limits with the requirement of radical change to avoid catastrophe. The survivalist narrative was a warning about rapidly approaching ecological limits due to overpopulation, resource depletion, etc. The proposed solutions were eco-authoritarian measures motivated by the framing of an impending ecological/societal collapse. Survivalism receded due to multiple critiques and challenges, notably from the Promethean discourse that denies ecological

limits due to a steadfast faith in the capacity of human ingenuity (Dryzek, 2005). The influence of survivalism has not disappeared; the survivalist emphasis on ecological limits is a guiding assumption of radical green discourses (Dobson, 2000). The threat posed by climate change has brought about a distinctive resurgence of alarmist, catastrophic, and survivalist discursive threads.

The primary challenge to survivalism was the discourse of sustainable development. Carruthers (2001) provides an account of the rise of sustainability/sustainable development discourses. The origins of sustainability are in the 1960s/70s during which time sustainability was a radical development discourse (Carruthers, 2001). Sustainability was a discourse of resistance, combining radical environmental consciousness with a critical re-thinking of a failed development enterprise; sustainability provoked challenging questions about limits/scarcity, wealth/poverty, and global inequity in addition to the environmental viability of westernization (Carruthers, 2001). Sustainability is now considered a hegemonic discourse that serves to legitimize a grand universal project of neoliberal globalization (Carruthers, 2001). The historical events that are pivotal to understanding the transformation of sustainable development include the World Commission on Environment and Development (WCED). The World Commission on Environment and Development and the resultant report *Our Common Future* (1987) led to the term "sustainable development" passing into policy discourse, if not into everyday language; sustainable development became famously defined as "a practice of development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

A dualistic radical to reformist divide characterizes the dominant approach to understanding the multiplicity of green discourses. Naess (1973) provides an example of the binary tradition by articulating a division between *shallow ecology* and *deep ecology*. Shallow ecology is concerned only with reform of the current system, while deep ecology is based on a fundamental shift in ethics/morals/values. Bookchin (1980) uses the descriptors of *environmentalism* and *social ecology* to demarcate the different approaches. Environmentalism seeks changes to the current socio-political system to bridge the gap between humanity and nature, while social ecology seeks changes within the totality of cultural/social, economic, and technological realms that cause ecologically destructive

practices. The distinction between reformist/radical discourses is evident in the language of modern-day environmental activists.

The divide demonstrates the recurring emphasis in green discourses on the need for either reform or transformation—a refashioning or a remaking—to facilitate the creation of a sustainable society. Eckersley (1992) surveys the dividing line between the anthropocentric perspective and the eco-centric perspective, considering the former to be a human-centered oriented in which nature has instrumental value, in contrast to the latter that is focused on an ecology-centered perspective where nature has intrinsic value. The debates center around the question of whether the change to an eco-centric orientation needs to be within each and every individual or whether a societal shift can occur while the domination of an anthropocentric perspective is maintained.

Dobson (2000) claims that ecologism can be considered its own ideology since the criteria for an ideology are a) a complete description of the social world, b) a program of change, and c) a vision of a future society. Ecologism includes a description of a social world that is in a dire state with finite ecological limits, a program for change that involves the transformation in the perspectives of both individuals and the socio-political system, and a vision of a future society that can be loosely described as "sustainable" (Dobson, 2000). Dobson (2000) believes that there are distinct differences between *environmentalism* and *ecologism*:

Environmentalism argues for a managerial approach to environmental problems, secure in the belief that they can be solved without fundamental changes in present values of patterns of production and consumption. Ecologism holds that a sustainable and fulfilling existence presupposes radical changes in our relationship with the non-human world and in our mode of social and political life.

The approaches of Hajer (1995), Hopwood et al. (2005), and Torgerson (2003) to ecological matters converge with the theories posited by Dobson (2000). The significance of the description of the state of ecological and/or social degradation is evident in the works of the aforementioned scholars who refer to the descriptor *frames*: "the framing of the problem also governs the debate on necessary changes" (Hajer, 1995). Torgerson (2003) argues that the way a problem is framed influences the

proposed solutions to said problem as the central questions in green political thought are the following: *What are the goals of the movement? How are the goals to be achieved?*

Dryzek (2005) defines discourse as "a shared way of apprehending the world that constructs meaning and shapes practices." Dryzek imposes two points of division to begin to make sense of the complexity of green discourses. The first division is whether the discourse is reformist or radical in its departure from industrialism. Reformist discourses are those that can coexist with the status quo, while radical discourses are those that significantly change the current socio-political relations. The second division is whether the departure from industrialism is prosaic or imaginative in its approach. Prosaic discourses are those that take the existing order as a given, while imaginative discourses are those that open up possibilities to reformulate the status quo. The divisions result in the following categorizations of green discourses:

- **Survivalism:** a radical, yet prosaic discourse; radical due to the unyielding assertion of ecological limits, but prosaic due to the call for dramatic authoritarian-style intervention to avoid catastrophe
- **Problem-Solving:** a reformist and prosaic discourse that tells a story of the management of ecological issues via the current system through wither increased bureaucratization, democracy, or markets
- **Sustainability:** a reformist, yet imaginative discourse that attempts to dissolve the conflicts between environmental, economics, and social justice concerns
- **Green Radicalism:** a radical and imaginative discourse that completely rejects the current societal order and advocates for the transformation of self and society

Dryzek (2005) further deconstructs the discourses by focusing on their respective storylines. The discursive elements focused upon are a) the basic entities constructed/recognized by the discourse, b) the assumptions about natural relationships embedded in the discourse, and c) the metaphors and other rhetorical devices employed by the discourse. Dryzek (2005) outlines a myriad of green discourses, which includes detailed account of the composition of the discursive elements, the primary contributors to the discourse, and the outcomes discourses have had in practice. Dryzek (2005) provides a visual representation of the diversity of green discourses (**Figure 1**). The thesis creates a framework that facilitates a systematic exploration of the grassroots climate movement which ranges from reformist to radical discourses. The elements of reformist to radical discourses

are based on the way the problem, the means, and the ends are framed within their respective storylines:

- **Problem:** How are ecological problems described?
- **Means:** What are the changes or strategies required?
- **Ends:** What is the vision represented of the possible future society?

Figure 1. Reformist/radical green discourses

Reformist	Problem-Solving *Environmental Justice* Sustainable Development
Radical	Eco-Socialism *Environmental Justice* Social Ecology

Source: *Dryzek (2005)*

Reformist Green Discourses

The reformist discourse of sustainable development is ubiquitous in ecological affairs. Sustainable development has been cited as "the metanarrative of environmental and development objectives" (Meadowcroft, 2000). The storyline of reformist discourses begins with an acknowledgment of ecological degradation. The storyline then proceeds to state that environmental problems can be handled within existing socio-economic and political relations with careful ecological and economic management (Meadowcroft, 1999). The storyline is based on the tenets of modernity, primarily the continued advancement in science, technology, and human ingenuity in addition to the benefit of economic growth. Reformist discourses posit that nature is knowable and thus capable of being managed by current elites without major modification to the system (Meadowcroft, 2000). The storyline explains its reformist discursive nature and its inclusion into power structures over multiple scales.

Reformist discourses recognize the existence of ecological problems and frame environmental degradation as significant. Sustainable development acknowledges a variety of ecological issues *and* social issues; for example, environmental (in)justice was noted by the World Commission on Environment and Development (WCED) and continues to be a subject of international discussion

on sustainable development at conferences, conventions, and negotiations sanctioned by the United Nations. Descriptive terms such as "crisis," "degradation," and "stress" are attached to frame the extent of the threat posed. Sustainable development evokes the language of limits in the form of resource depletion and carrying capacity, which indicates attention to the limits discourse. The ambiguity of sustainable development rhetoric leads to contradictions; for instance, *Our Common Future* (1987) states "sustainable development does imply limits—not absolute limits, but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities." Sustainable development implies a similar ability to potentially overcome ecological limits, which has led to the critique that ecological limits are presented as able to be manipulated.

Redclift (2005) believes that there is still considerable confusion surrounding what is to be sustained that different discourses of sustainable development fail to address. The view of nature implicit in sustainable development is noticeably anthropocentric; the discourse presents nature as available for the use of humanity, which is evident in the use of the term "resources" to denote nature. Ecological decline is derived from the structures of modernity, including unsustainable production/consumption processes to which modernity gave rise. Sustainable development identifies the cause of the problems as structural design faults, which can be rectified in the system that gave rise to said faults. The rhetoric is that only the system that gave rise to environmental/social problems can solve them—an ironic statement. Sustainable development constructs the causes of ecological degradation as the current production/consumption patterns that involve all members of society.

Reformist green discourses advocate a transition strategy without major changes/challenges to the current socio-economic and political system. Sustainable development rhetoric creates calls for changes to governance with an emphasis on social justice; however, the strategy is primarily concerned with the promotion of science/technology and the continuation of humanistic advancement. The emphasis on environmental/social justice is something that is met with a silence in other discourses. Hay (2002) finds that the legacy of sustainable development is its creation of an

interlocking of ecological, economic, social, and political concerns within policy discourse and its status as the prevailing vision of a more sustainable world. A connection between ecological degradation and social injustice informs the need to respond with a notion of development that is simultaneously responsive to the needs of environment *and* society. Social justice and human equity concerns are part of sustainable development's transition strategy.

Baker (2006) asserts that sustainable development is inclusive in terms of the social actors the discourse identifies as change agents, constructing roles for civil society/citizens in participatory governance arrangements. *Our Common Future* (1987) finds "the distribution of power and influence within society lies at the heart of most environment and development challenges." The acknowledgment enables an array of actors to have agency and proposes a variety of participatory governance approaches. Agency is bestowed upon far more people under sustainable development than within other discourses. Sustainable development demonstrates the recognition of so-called others, including Indigenous communities, local governments, and environmental organizations. Pezzoli (1997) alleges that multi-scalar operations over local, regional, national, and international organizations dedicated to promoting environmentally sound approaches to economic development are evoked by the discourse of sustainable development.

Sustainable development can extend into the radical spectrum. *Strong* and *weak* prefixes are often applied to sustainable development to denote the scale of change that might result. Christoff (1996) provides a summary on the differences between strong/weak approaches to sustainable development (**Table 3**). The table suggests that a strong sustainable development would create a number of political-economic and ecological development paths. Strong sustainable development is concerned with systemic change and grants agency to a far greater array of societal actors to achieve change that accommodates alternative socio-political arrangements (Dryzek, 2005). Sustainable development evokes a multiplicity of futures: "No single blueprint of sustainability will be found as economic/social systems and ecological conditions differ widely among countries" (WCED, 1987). Meadowcroft (2000) is optimistic that while sustainable development originates from the status quo,

a series of far-reaching ecological/social justice changes will be made over the transition period. The inability to provide a blueprint leads to a plurality of possible ends.

Table 3. Principles of strong/weak sustainable development

Strong Sustainable Development	Weak Sustainable Development
Ecological	Economic
Institutional/Systemic (Broad)	Technological (Narrow)
Communicative	Instrumental
Democratic/Open	Technocratic/Closed
International	National
Diversifying	Unitary

Source: *Christoff (1996)*

Sustainable development has been a target of critique in terms of both theory and practice. The shortcomings of sustainable development are evidenced by continuing ecological degradation over the last few decades while it has been the meta-narrative in policy (Dryzek, 2005 & Meadowcroft, 2000). The ambiguity of sustainable development has been the focal point of critiques. Environmental systems are in decline, despite the public policy rhetoric. Dovers (2005) concedes that some progress has been made in areas such as nature conservation; however, the gains are not representative of the overall trajectory as environmental degradation continues and the dominant, causal socio-economic system has not been altered. The focus on development is argued to take precedence over ecological concerns, which leads to a larger critique that contends "sustainable" and "development" are based on incompatible assumptions (Banerjee, 2003 & Dryzek, 2005).

Radical Green Discourses

Radical green discourses encompass a comprehensive critique of industrial society that is perhaps the most significant ideological development of the environmental movement (Dryzek, 2005). Radical discourses question the core tenets of modernity to identify systems, powers, and ideologies that had brought about ecological/social transformation. *Radical* is an apt descriptor as the term is historically associated with going "to the root" (Scruton, 1982). Storylines of environmental justices

are conceptualized as having achievement in practice without much in the way of theoretical reflection as they emerged at the grassroots level to achieve certain objectives. The descriptive, visual imagery presented in the discourse constructs a catastrophic present, which might be turned into a multiplicity of utopian futures with the necessary action (Dryzek, 2005).

The principal set of radical green discourses—eco-socialism, social ecology, and deep ecology—all portray a state of social injustice and ecological degradation that requires comprehensive redressing.

Löwy (2005) states that the storyline of eco-socialism is based on the argument that the protection of the environment is a humanistic imperative. Eco-socialism fuses socialism, ecologism, and environmentalism; the result is that eco-socialism has its focus on the cause—capitalism—that must be substituted with socialism for the salvation of the planet (Dryzek, 2005 & Hay, 2002). The storyline is of a world in a crisis—ecological *and* social—that is created by capitalism's pursuit of profit and infinite growth; the only solution to the problem is a far-reaching transformation to an international socialist system. Dryzek (2005) argues that eco-socialism is a discourse characterized by confidence in the ability of expert problem-solving to overcome ecological problems via a widespread restructuring of existing socio-economic and political organizations.

Chodorkoff (1990) states that the promise of social ecology is the harmonization of culture and nature, which will lead to a so-called better future: a future that is free of domination and hierarchy. Radical green discourses explain that the origins of many socio-ecological issues cut to the core of modern society; social ecology looks to transform current outlooks on both social *and* environmental phenomena while promoting the interdependence of people, collectives, and institutions. The main storyline of social ecology is evident in its definition:

- A radical, reconstructive critique of current social, political, and ecological trends
- An ecological and ethical approach to issues of environment and society

Dryzek (2005) states that the storyline of deep ecology is based on the idea of the inherent worth of living things regardless of their instrumental utility to human needs—nature has intrinsic value that needs to be protected from/by human beings. The narrative is based on the need for

transformations—economic, political, and social—that are aimed at creating equity with nature. Dobson (2000) describes the highly critical, yet reconstructive discourse of deep ecology with its objective premised on the transformation of people and the way they think about and relate to the natural world.

Radical discourses frame the world as being in ecological peril, with humanity's survival positioned on a precipice. Dobson (2000) states that the radical green consistent use of an apocalyptic tone is unique in its description of an ecological crisis. Social ecology evokes vivid descriptions of a catastrophic breakdown of the system that maintains the stability of the planet: "The ecosphere is threatened to a degree unprecedented in humanity's tenure on the planet" (Bookchin, 1990). The acknowledgment of interconnected ecological/social issues is far greater within radical discourses than reformist discourses. Löwy (2005) lists the primary concerns from the stance of radicals to be:

Exponential growth of air pollution in big cities and across rural landscapes; fouled drinking water; global warming, with the incipient melting of the polar ice caps and the increase of "natural" extreme weather-related catastrophes; the deterioration of the ozone layer; the increasing destruction of tropical rain forests; the rapid decrease of biodiversity through the extinction of thousands of species…

Radical green discourses bestow agency upon many more actors than reformist discourses. Environmental justice gives agency to all those affected by socio-ecological issues, including but not limited to indigenous people, people of color, rural/urban families (Salleh, 2004). "Conscious agents" are the change agents within eco-socialism, social ecology, and deep ecology: "Agents act collectively to challenge the social sources of ecological crises" (Bookchin, 1993). The individuals who are affected are exhorted to work collectively at the grassroots level to change environmental policy/regulation (Gibbs, 2002). Radical green discourses construct environmental activists as capable of being agents of change.

Environmental justice is included in the realm of radical discourses due to its linking of ecological degradation with social inequality. Environmental justice has arisen largely at the grassroots level to address locale-specific concerns. The framing of ecological/social concerns by environmental justice has emerged, evolved, and expanded over time. The environmental justice movement reframes the

environment as intimately connected to peoples' lives, thereby providing a relevancy that has been omitted from some other green discourses. Environmental justice movements continue to underscore the interconnection of ecological and social justice. The recent conception of "climate justice" has become a strong rallying point for grassroots networks or social movements that collaborate with national/international NGOs, e.g., the partnership between #StopAdani and the Australian Conservation Foundation (ACF). Environmental justice movements incorporate a local to global focus. The local to global, personal to societal, and societal to ecological framings demonstrate an all-encompassing narrative that presents environmental/social concerns as interlinked and inseparable.

Box 2. Discourse analysis of sustainable development

Basic entities constructed/recognized
- Capitalist economic system
- Ambiguity concerning existence of limits
- Nested and networked social and ecological systems

Assumptions about natural relationships
- Cooperation between environment/society
- Nature is subordinate to humans
- Economic growth, environmental protection, and long-term sustainability go together

Key metaphors and other rhetorical devices
- Nature as capital
- Appeals to logic
- Connection to progress

Source: *Dryzek (2005)*

Box 3. Discourse analysis of environmental justice

Basic entities constructed/recognized
- Global limits to economic growth
- Nature as a complex set of ecosystems
- Social, economic, and political structures are interconnected

Assumptions about natural relationships
- Complex interactions between human beings and nature
- Environment and society can and should co-exist
- Justice is measured by "triple bottom line:" people, planet, profit

Key metaphors and other rhetorical devices
- Nature as organic
- Appeals to ethics, i.e., "right"/"wrong"
- Connection to equality (environmental, social, economic)

Source: *Dryzek (2005)*

Box 4. Discourse analysis of green radicalism

Basic entities constructed/recognized

- Global limits to economic growth
- Nature as a living, breathing entity, e.g., Mother Earth
- Social, economic, and political structures are inseparable

Assumptions about natural relationships

- Duality of environment/society
- Nature assumes priority over humans
- Organic relations between human beings and nature have been transgressed

Key metaphors and other rhetorical devices

- Nature as perfect
- Appeals to emotions/feelings/sentiments
- Connection to change/transformation

Source: *Dryzek (2005)*

Matrix 1. Summary of green discourses

Discourse	Storyline	Problem	Cause	Means	Agents	Ends
Sustainable Development	Socio-ecological problems might be solved by new forms of development	Ecological degradation, social inequality	Exploitation of resources, unequal power relations	Participatory governance in environmental management	Business, company Civil society Government agency	Plurality of outcomes with potential for conflict, e.g., environmental conservation v. economic development
Environmental Justice	Communities exposed to environmental health risks need to find resolutions through empowerment and grassroots action	Community well-being, environmental health, human rights	Degradation of environment, unequal power relations	Public participation in environmental activism	Community members	Multiple local/global outcomes with possibility of justice., e.g., environmental conservation and social equity
Eco-Socialism	Capitalist principle of development/ growth pushes limits of ecology/society	Ecological degradation, social inequality	Exploitation of resources, unequal power relations	Participatory governance in environmental management	Conscious agents	International eco-socialist system providing for all needs within ecological limits

Social Ecology	Ecology and society are binary by default, i.e., the binary of humans and environment	Community well-being, environmental health, human rights	Degradation of environment, unequal power relations	Public participation in environmental activism	Community members	Integrative system allowing for interaction between ecology and society
Deep Ecology	Humanity and nature are viewed as separate, not together	Ecological degradation, social inequality	Exploitation of resources, unequal power relations	Participatory governance in environmental management	Grassroots activists	Innovative socio-political system based on ideals of ecocentrism, ecological

Source: *Dryzek (2005)*

Environmental Discourses, Social Movements, and Scale

Dryzek (2005) provides a framework of environmental/green discourses generally speaking, which allows for a specific, place-based analysis of the conversation surrounding the Carmichael not only in terms of the languages used by activists, but also in terms of the current socio-political setting of coal mining in Australia. This section details ideas on discourses and scales that also inform my analysis of the #StopAdani movement.

A myriad of more numerous, sophisticated arguments and strategies are being used by an expanding range of actors to contest mining, and as they do, the scale of social movements and activism changes (McCarthy, 2019). The contestation reflects emboldened resistance in the face of hardening resource fetishization and highlights how "various social, political and economic actors operating at multiple scales" are now formally and informally involved in resource regulation broadly conceived (Himley, 2013). A recent review of social resistance to mining suggests that mining conflicts are increasingly characterized by a struggle between two major forces. On one hand are 'globally connected resistance movements—participating in local and wider debates about post-neoliberal and socioecological alternatives' and, on the other hand, are transnational mining companies often working in partnership with various arms and levels of the state (Conde, 2017), including state-sponsored authoritarian populism in which government leaders manipulate environmental governance for political gain (McCarthy, 2019).

A primary outcome is intense debate about alternatives to existing extractive environmental regimes (Conde, 2017). Such debates reposition previously localized conflicts such as the mine controversy as global ones in a social as well as physical sense. Scale is of greater significance than ever, and increasingly is recognised as a key consideration to understand and respond to climate change, primarily because local coal mining projects exist within debates about society and the planet. Numerous scholars of multi-scalar governance suggest that greenhouse gas mitigation is being hampered by groups attending to the wrong (mismatched) scale or by being inflexible in the scales they engage with (Di Gregorio et al., 2019; Ireland & Clausen, 2019), yet scholarship is strikingly disconnected from that on mining and fossil fuel production, and both fields have implicitly realist readings of scale that overlook the way in which it is socially constructed (Marston, 2000), political (Delaney & Leitner, 1997), and performative (Kaiser & Nikiforova, 2008). Scale provides a way of organizing my analysis because the socially-constructed scales are identical to those invoked by activists who speak in terms of *local* vs. *global*.

The way scale is being constructed and contested by environmental activists is explored in my work in order to establish the different scales engaged by activist politics as well as to understand how activists socially construct particular scales as part of their contestation. Kurtz's (2003) ideas about scale frames and counter-scale frames are particularly useful in analyzing the discourses adopted by eco-activists. Scale frames are the "strategic discursive representations of a social grievance … with meaningful reference to particular geographic scales" through which competing actors seek to shape a controversy; counter-scale frames refer to an "action frame intended to undermine the resonance and persuasiveness of a given scale frame" (Kurtz, 2003). Scale frames have been used to theorise how: voices are included and excluded from policy debates (Hilson, 2015; Sze et al., 2009; van Lieshout et al., 2011); incongruous or singular scale frames can result in policy paralysis (Dewulf, 2013; van Lieshout et al., 2012); uncertainty in science policy debates is used as a political tool (Mansfield & Haas, 2006); non-humans and places are interwoven to produce environmental (in)justices (Bickerstaff & Agyeman, 2009); and ENGOs have "stacked" frames across multiple scales as a counter-hegemonic strategy to oppose inappropriate resource development (Sica, 2015).

Socially-constructed scales are utilized in this thesis as one way of situating the #StopAdani movement within a broader, much more extensive landscape of pro-mining and anti-mining contestation. Scale as a space of differentiation between what's happening here and what's happening there constructs Adani as one piece of a much larger puzzle of environmental politics. A description of environmental discourses across scales and across actors/institutions allows for the Adani mine to be positioned within the political economy of Australia.

#StopAdani as a social movement has been successful because of its integration of many scales through the use of social media. Social media platforms are becoming places where numerous users publish and exchange information at any time and in any place. An individual user acts as an intelligent sensor that collects and shares information about his/her environment. The overwhelming amount of information crowdsourced at real-time in social media can be used to study individuals' status, opinions, and behaviors. Messages in social media can be associated with the geographical locations, especially with the increasing popularity of GPS-enabled mobile devices. Geo-tagged data allow researchers to uncover people's responses, opinions, and attention to specific events at real-time and real-place. More and more people are turning to social media to gather *and* to share news. Social media not only provides another channel for broadcasting news, but also allows for dialogue between stakeholders, e.g., coal miners, environmental activists, etc. Goodchild (2007) explains the fact that the utility of social media for environmental activism has two fundamental functions: 1) as a tool to monitor emerging discourses/languages transmitted by users; and 2) as an effective means of communicating information to a broad audience.

Data collected from social media have been utilized to support the principles of environmental activism in various ways (Alexander, 2014). Social media data contributed by eco-activists provide first-hand information about demonstrations, protests, etc. at real-time and in real-place (Kent & Capello, 2013; Li et al., 2018). Spatio-temporal distributions of activist-related social media can be used as proxies to evaluate the prevalence of environmental discourses, e.g., sustainable development, among social media users today (Zou et al., 2018). Studies have been conducted to

examine the impacts of various social network structures on user actions/behaviors in the context of climate change (Jiang et al, 2019; Kim & Hastak, 2018). Empirical evidence shows that information disseminated through various media platforms can influence people's perceptions of hazard/risk (Västfjäll et al, 2013; Wahlberg & Sjoberg, 2000), attitudes towards climate change (Lowe et al., 2006), and knowledge about short/long-term impacts (Houston et al., 2015). Social media has the ability to increase public awareness of socio-ecological issues, engage individuals in cross-disciplinary discussions, and create collaborative, not competitive social cohesion (Alexander, 2014).

III. Research Site

The scale of developments planned for the Galilee Basin is such that regional and global consequences are equally, if not more, prominent than local concerns, a fact which closely shapes activism surrounding the mind. The various concerns are increasingly "bundled," bringing together novel coalitions of groups and issues, much to the ire of governments and industry pushing for swift progress. The Carmichael has become a battleground for local, regional, national, and global tensions around coal development, played out through formal and informal avenues. The following chapter presents a snapshot of these dynamics by drawing between the Galilee and the broader territory of debate and discussion around coal development in Queensland, elsewhere in Australia, and on the global level.

Scoping the Territory

Figure. Map of Galilee Basin, Queensland, Australia.
Source: *Minerals Council of Australia (MCA), Brisbane, Queensland (2013).*

The Galilee Basin is a coal basin in central-west Queensland on the brink of being "opened up" for the first time. A series of mines, rail, and port infrastructure will be established—if all goes according to plan—leading to the annual export of around 300 million tons of coal to foreign markets: a

volume that would roughly double Australia's, and equal nearly one third of current world trade in coal. The proponents as well as the state/federal governments are eager for the projects to proceed; however, almost every component of the proposed developments has been clouded by controversy, with the prospect of substantial adverse consequences at local, regional and global levels. Notably, the proposed coal developments in the Galilee appear woefully out of step with the imperative to limit fossil fuel production and consumption in the face of global warming. The proposed opening of the basin simply does not make sense—at least on the face of it—to the majority of environmental activists who are protesting the Carmichael.

Physical Geography

The Galilee is a large inland basin in the northwestern region of Australia that is characterized by a geographic complexity: the basin spans a number of physiographic regions with a relatively complex pattern of depressions in the earth's surface. The basin covers a total area of 247,000 km^2 (Scott et al., 1995). The climate of the basin is generally hot and dry throughout, becoming more extreme towards the western regions (Scott et al., 1995). Monthly mean temperatures show daytime summer temperatures are mostly in the mid-30s°C, with winter overnight temperatures most commonly between 5°C and 12°C (Scott et al., 1995). "Hot days' with temperatures exceeding 35°C can be expected between 73 and 101 days per year (Scott et al., 1995). The annual rainfall within the basin ranges between 150 mm and 1,477 mm, with an average rainfall of between 492 mm and 610 mm depending on location (Scott et al., 1995). Conservation reserves occupy around 3% of the basin, wetlands of national significance occupy 0.3% of the total area of the basin, and riverine floodplains occupy 15.5% of the basin; the dominant (32.7%) occupation in the basin is the agriculture, forestry, and fishing industry (Scott et al., 1995). The basin has a diversity of ecological communities as a consequence of the interactions between its spatial extent, its climatic gradients, and its diverse landscape (Scott et al., 1995). The majority of the basin is within natural resources management areas, which are under the jurisdiction of state/federal governments.

Natural Resources

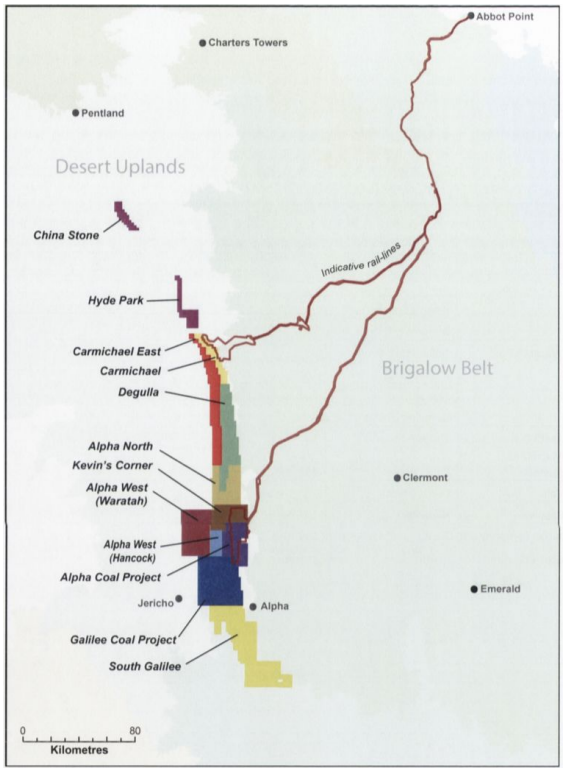

Figure. Map of proposed coal projects in the Galilee Basin.
Source: *Department of Environment and Heritage Protection, Brisbane, Queensland (2017).*

The Galilee Basin contains deposits of coal and has been described as Australia's newest mining province. The basin does not have any operating coal mines; however, exploration of conventional oil, shale gas, and thermal coal is being conducted. Geoscience Australia reports mineral deposits within the basin to be one of the most impressive resources in the world in terms of diversity. The privately owned development company Waratah Coal announced the discovery of 4.4 billion tons of coal in the basin in 2008. The basin has 49 granted mining leases, which comprise a total area of 19.3 km^2; the leases in practice impact surrounding areas in the following ways, which have been documented in the environmental impact statements of pre-existing mines: air quality, noise/vibration, water pollution, etc. The mining leases within the basin are associated with small-scale mining operations for the following minerals: barite, bentonite, calcite, gypsum, limestone, opals, phosphate, potassium. The basin has an active petroleum production lease PL65 held by Australian Gasfields Ltd. The Galilee Basin has 183 quarry operations, which constitute a combined area of 94 km^2.

The basin is known to have large deposits of coal, especially on its eastern margin. The coal is classified as highly volatile, meaning highly profitable in terms of both energy and economy: the coal will provide a lot of bang for its very expensive buck. The basin does not have any coal mines in production; coal mining lease applications within the basin are included in the following table (Table). The proposed coal mining leases have a combined footprint of approximately 1.39% of the entire basin, primarily encompassing underground mining opportunities. The coal mining leases within the basin have near term open-cut and long term underground resources; in other words, the basin is a place of short-term (surface) and long-term (subterranean) investment. The basin also has limited potential for future development of coal seam gas.

Table. Proposed coal mines in the Galilee Basin

Company	Project Name(s)	Annual Production of Saleable Coal (Millions of Tons)	Status
Adani Mining	Carmichael	60	Approved
GVK Hancock	Alpha Coal Project Kevin's Corner Alpha West	32 30 24	Approved Approved EIS Active
Waratah Coal	Galilee Coal Project Alpha North Alpha West Carmichael East	40 40 N/A 9	Approved Pre-EIS Pre-EIS Pre-EIS
AMCI & Bandanna	South Galilee	17	Approved
Macmines Australia	China Stone	45	EIS Active
Vale	Degulla Mine	30	Pre-EIS
Resolve	Hyde Park	10	Pre-EIS

Source: *Institute for Energy Economics and Financial Analysis (IEFFA)*

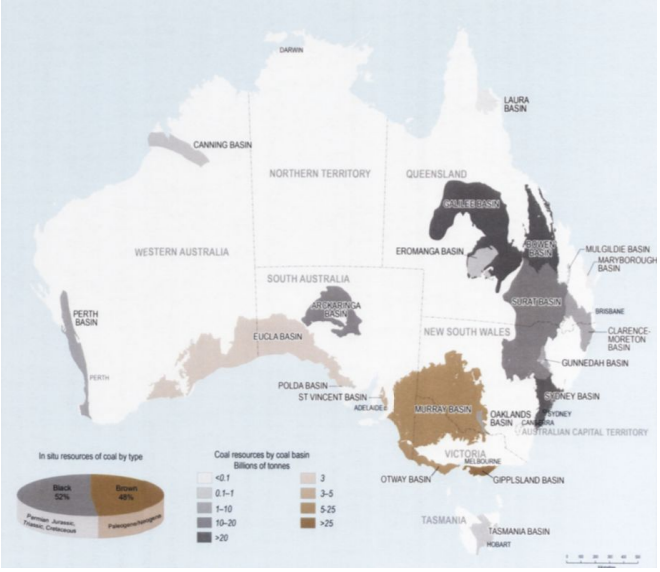

Figure. Map of Australian coal resources, including the Galilee Basin.
Source: *Geoscience Australia, Brisbane, Queensland, (2012).*

Human Geography

The Galilee Basin is comprised of 13 local government areas, with none entirely included within the basin. The basin spans nine planning regions and five natural resource management regions. The Galilee overlies all three Queensland Mining Regions: northern, central, and southern. The basin is primarily composed of rural townships. The estimated residential population of the basin in its entirety is 20,000, which is approximately 12 people/1 km^2. The major economic activities in the basin are government services, retail, construction, education, transport, accommodation and tourist-related activities, e.g., winery tours. The dominant occupation among residents of the basin is in the agriculture, forestry, and fishing category, which is dominated by cattle and sheep; the Galilee is a mixed-use community that is predominantly reliant on industries other than natural resource/fossil fuel extraction. The mining sector is presently an incidental occupation category within the region, but the statistics may change during construction and/or operation phases of projected coal mining developments, including the Carmichael, with possible impacts on other employment sectors.

The Indigenous heritage of the basin is complex, with myriad tribes, such as the *Wangan* and the *Jagalingou*. The *Wangan* and the *Jagalingou* are the proud Traditional Owners and Native Title

Applicants of a vast area of land in central-western Queensland, including the Galilee (Wangan & Jagalingou Family Council, 2013). The Indigenous community has been the custodians of the land for thousands of years: "It's our responsibility to protect our land, water, people, history, and totems" (Wangan & Jagalingou Family Council, 2013). The *Wangan* and *Jagalingou* Traditional Owners are fighting to defend their lands from Adani since native title claims covering large portions of the basin are written into a number of indiegous land use agreements. The impacts of the mine would not be limited to the Galilee—the Carmichael would have cascading effects on the neighboring lands/waters of other Traditional Owners and other landholders in the region.

Coal in the Galilee Basin renewed interest after a two-decade hiatus in exploration activities, following a spike in international coal prices in the early 2000s—at which point it was considered economically viable to develop the vast, yet remote reserves of coal. The seemingly insatiable markets that were ready to absorb Australian (Galilee Basin) coal, new mines, rail lines, and port facilities appeared on company (private) and government (public) drawing boards. The Carmichael is one of many proposed development projects in the area, including rail lines connecting the southern and the central mines to the export facilities on the coast. The potential and likely consequences from opening up the Galilee have drawn a spectrum of opinions and perspectives, some of which are encapsulated in the social media posts of environmental activists. The statements of eco-activists demonstrate the high hopes and strong sentiments on all sides of the "battle" over the Galilee Basin. Discussion, debate, and protest play out within the region as well as on city streets and in the halls of Parliament.

The Coal Conundrum

The important place of coal in human society has long been observed, especially in Australia. Adani is but the latest iteration of the long-established global obsession with coal and its economic illogic, i.e., a stranded asset. Little doubt remained in the minds of contemporary observers that coal played a pivotal role in the transformation of society and in the daily experience of countless people, especially by the time the Industrial Revolution was in full swing: "...manufactures, commerce, civilization, justice, happiness, and Christianity—home and home enjoyments—are all more or less

bound up with the existence and availableness of coal...." (*Sydney Morning Herald*, 1848). The transformative qualities of coal were not lost on Australians, primarily because of its classification as *the* commodity that defined the very materiality of Australia: "Coal is a most important substance in the welfare of a country, as it depends on so many industries; consequently, other things being equal, that country which has the best coal supply has an immense advantage over her neighbours…" (Frederick Danvers Power, 1912). The competitive advantage afforded by coal is evidenced in its glorification as the ultimate natural resource of Australia.

Coal may well have lost some of its magical lustre over the course of the twentieth century, but as a cheap and abundant source of energy its benefits are still undeniable. Oil and gas displaced the predominance of coal over the twentieth century to some extent, but coal has remained the backbone of economic development in much of the world. Coal has been the fastest growing fossil fuel since the beginning of the twenty-first century, providing 41% of the world's electricity supply in 2011. The International Energy Agency (IEA) forecasts a continued growth in global coal demand of 0.7% per year out to 2035 if existing global commitments to address climate change are taken into account. However, the IEA also points out that coal use would need to fall by one third between 2011 and 2035 for a "50% chance of limiting the long-term increase in average global temperature to 2°C"; temperature increases beyond this are commonly regarded as posing unacceptable risks for humans and other life on Earth.

Environmental activists claim that the costs of coal far outweigh its benefits: the persistent and numerous grounds for opposition to the mining, transport, and burning of coal over the past seven centuries are based on the ecological *and* the social impacts of mining. Only in very recent decades with better scientific understanding of the threat of global climate change, have there been calls to challenge fundamentally the position of coal in human affairs. Climate change arguments have bolstered substantial long-running concerns about other impacts of coal, such as the effect of mining on agricultural lands, water resources and communities, and the toll of coal combustion on human health. Nonetheless, for the time being at least, little headway has been made to stem the growth of global coal production and consumption.

Changing the function and status of such an important and deeply entrenched commodity as coal does not come quickly or easily. Christiana Figueres, Executive Secretary of the United Nations Framework Convention on Climate Change, has likened the necessary transformation of the coal industry to the challenge undertaken by John F. Kennedy to put a man on the moon within a decade, at a time when the knowledge and technology did not exist to do so. Speaking to a meeting of the World Coal Association, Figueres implores that "we must transform coal with the same determination, the same perseverance, the same will." Arguably, "transforming coal" is in fact a process of far greater complexity and difficulty than putting Earthlings on the moon, given the degree of coal's embeddedness in existing energy, infrastructure, technological, economic, institutional and political systems, and the vested interests that work to maintain the status quo.

#StopAdani: The Landscape of Environmental Activism in Australia begins from the position that the current role of coal in human society is problematic for environmental, social, political and economic reasons, and that there is a need for fundamental change. Coal is a source of carbon and energy, but it is also much more. Coal is inextricably part of the fabric of modern society. Thus, working towards the goal of 'doing something' about coal requires an appreciation of what it is we are dealing with in the fullest sense possible. Historian Tony Wrigley eloquently captures the core idea: "We cannot choose but to be the inheritors of the industrial revolution; we can choose to know our inheritance better than we do."

The picture that emerges from the cited gray literature is one in which coal has been pivotal in delivering modern industrial society as we know it. Coal was the first energy source to free humans from the bounds of the 'organic' economy. Cheap and abundant coal led to an extraordinarily high level of energy dependence. Coal shaped and continues to shape technologies, infrastructure, economies, institutions and politics. The distinctive features of the biophysical setting and the sociocultural history of Australia have enabled an especially prominent role for coal. A multilayered, historically-charged series of forces are propelling coal mining in the Galilee. The previously mentioned finding invites the question as to whether it is possible to approach coal dilemmas without also attending to the multiple human systems in which coal is embedded, and to what extent more fundamental change is necessary and/or possible.

The Galilee Basin in Queensland, Australia—and 21st-century global coal dynamics more generally—is a very live and therefore problematic subject to address. An on-going phase of depressed coal prices and the struggling financial situation of key proponents has led to speculation that the much-hyped projects might not proceed. Some have even ventured to suggest that coal is now in structural decline globally—a notion that seemed extremely remote even just a few years ago at the outset of this research. The majority of the research is still highly pertinent to the more general question of how, as a global society, we might understand and deal with the deeper forces that lie behind the momentum towards fossil fuel development. Even in the optimistic case that production and consumption of fossil fuels are wound back in accordance with an objective to limit global warming to 2°C, there will still be need for a thorough understanding of the complex dynamics of energy in human society when imagining and designing more appropriate energy futures. And in this sense, there could hardly be a better opportunity than to learn all available lessons from human society's long relationship with coal *and* the way environmental activism itself is changing over time amid rapidly shifting coal politics.

Changing the Climate

The globally significant coal stocks in the Galilee Basin have mobilized climate activists in Australia and abroad. Climate change is the biggest driving force behind opposition to the coal developments outside the region itself. Geoscience Australia conservatively estimated that there were about 23 billion tons of coal resources in the Galilee Basin (Department of Industry, 2014). If 23 billion tons of coal were to be burnt without any form of carbon capture/storage, then 35-39 billion tonnes of carbon dioxide (CO_2) would be released to the global atmosphere (Department of Industry, Innovation, Climate Change, Science, Research, and Tertiary Education, 2013). The projects that have been approved or are currently being assessed in the Galilee represent around 12 billion tons of coal resources and have a projected output of over 230 million tons of coal per year. The annual amount of burnt coal would result in at least 490 million tons of CO_2, which is equivalent to 88% of Australia's total domestic emissions in 2013. If the projects that are not yet being actively assessed are also included, then the total annual production might be as high as 330 million tons of coal,

which is equivalent to over 700 million tons of CO_2, or 125% of Australia's total annual emissions in 2013.

The concept and quantification of a global carbon emissions budget has been discussed since at least 2003 (Grassl et al., 2013). The concept appeared more publicly in 2009, in two consecutive letters published in *Nature*. The letters reported on research that quantified the limits on cumulative greenhouse gas emissions that would be needed to restrict warming to various levels, and within various degrees of certainty (Meinshausen et al., 2009). The approach has since been adopted by the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), as well as numerous scientists and activists (IPCC, 2013). IPCC calculations suggest that for a 67% chance of limiting warming to 2°C, only 275 billion tons of carbon (1 trillion tons of CO_2) can still be emitted from all sources (IPCC, 2013). The Potsdam Institute calculated that for a 79% chance of limiting warming to 2°C, only 154 billion tons of carbon (565 billion tons of CO_2) remain in the world's carbon budget (Carbon Tracker, 2013). A consistent finding is that there are far greater proven reserves of fossil fuels on Earth than can be burnt to keep within the carbon budget (Raupach et al., 2014). Various estimates translate this as representing between 67% and 79% of known fossil fuel reserves, the majority of which is made up of coal (International Energy Agency, 2012). If all the Galilee's known coal reserves were combusted, then it would also equate to 6-7% of the world's remaining "carbon budget" for restricting warming to below 2°C (Carbon Tracker, 2013).

The contribution of Australia's coal exports to global carbon emissions has been in the public consciousness to some degree since at least 2005, during which time two separate legal cases in the jurisdictions of New South Wales and the Commonwealth challenged the development of new mines on the ground of climate change impacts. However, the climate change implications of Australian coal exports have become more prominent since around 2010. Guy Pearse, an observer and a commentator of coal politics in Australia, ventured to chastise Australia's "big brand" environment groups for overlooking the issue at public events in 2010 and 2011 (Queensland Department of Natural Resources and Mines, 2011). The public's attention was also likely piqued at

this time by international discussions and events, such as the United Nations (UN) conference in late 2009 (Christensen, 2013). Coal and coal exports have become better integrated into public narratives about Australia's contribution to climate change, and the Galilee Basin is often mentioned as a prime case in point (Vanclay & Enticott, 2011). Well-recognized activist groups, such as Greenpeace, Friends of the Earth, and 350.org have all fixed their attention on the Galilee as a "ticking carbon time-bomb" (Greenpeace Australia Pacific, 2012). Bill McKibben, the founder of 350.org, while touring Australia in mid-2013 made frequent mention of the Galilee Basin during talks and in opinion pieces, urging Australians to take responsibility for our "massive deposits of hydrocarbons," which he described as a "menace to the planet" (McKibben, 2013).

Besides raising awareness of the emissions that would result from the burning of the coal, there has also been an effort to undermine investor confidence in the mines, which has come on the back of a number of international studies and reports highlighting associated financial risk of carbon-based investments in fossil fuels (Ansar et al., 2013). Carbon Tracker's report *Unburnable Carbon*, with an explicit message about the need to move away from fossil fuels, was followed by a number of others that included more conventional, established commentators on resource markets (Carbon Tracker, 2013). A follow up report which focussed on the Australian situation, highlighted the financial risk to the Queensland state government if the global "carbon bubble" were to prevent the Galilee mines from going ahead, recommending policymakers "to minimise exposure by diversifying their tax base" and limiting public investment in coal-related infrastructure (Caldecott et al., 2013). More specific economic risk from the development of the Galilee has also been investigated and promoted, such as reports focussed on the Alpha and Carmichael mines commissioned by Greenpeace. The reports describe investment in the projects as a threatening proposition, for instance:

Building Australia's largest coal mine in the untapped Galilee Basin would challenge experienced operators, but the combination of an inexperienced developer, slack demand globally for coal, and a deteriorating cost of production scenario in Australia moves the project beyond speculative—the Carmichael appears likely to remain "stranded in the valley of death" (Buckley & Sanzillo, 2014).

Drawing the Battlelines

The bundling of multiple concerns by multiple individuals and groups opposing coal is a key feature of the current debate in regards to the Galilee Basin and coal development in Australia more generally. Impacts on land, water, communities, human health and other industries from coal development are not infrequently woven into single narratives and analysis (Caldecott et al., 2014). Criticism against the authors of the leaked *Stopping the Coal Export Boom* document show that environmental activists have intentionally orchestrated the movement in this direction (Queensland Resources Council, 2014). However, it is more likely that the broad-coalition-of-concerns character of Australia's anti-coal movement has emerged on the basis of shared interests, with extra funding and organization support making more effective what was occurring anyway.

Table. Timeline of the Queensland-based development conflicts surrounding the Adani mine: November 2010-March 2017

November 2010	Adani Mining Pty. Ltd. begins the approval process to establish the Carmichael in the Galilee Basin
August 2012	Adani plans to build a series of towns to house fly-in/fly-out miners who will work for its new mine
May 2014	Queensland's coordinator-general approves the $16.5 billion mine/rail projects subject to conditions
June 2016	Mackay/Townsville city leaders begin discussions with Adani about the townships becoming hubs for mining
December 2016	Gautam Adani meets state/federal government officials in Mackay/Townsville and lays out a timeline for the project; therefore, battle lines are drawn between which cities/towns will serve as the so-called "centers of development"
February 2017	Adani's mine is thrown into doubt by a shock federal court decision that threatens to void scores of native title deals across Australia
March 2017	Jobs are expected to begin flowing almost immediately after Adani gives final investment approval for the first stage of the Carmichael mine

Source: *Mackay/Townsville Bulletin, 2017*

Long-time conservationist Drew Hutton's efforts to support landholders' opposition to further mining ventures and his initiation of the Lock the Gate movement is a case in point, as are earlier examples of grassroots opposition to coal mines: "My view is you mobilise the people, first of all, who are most directly affected" (McManus & Connor, 2012). Directly following the publicity of the leaked document, industry, unions, federal and state governments spoke out in unison against the anti-coal campaign, labelling it irrational and irresponsible (Stevens et al., 2014). Pointed criticism of the movement has also continued since that time, with an effort to paint the activists involved as extremists (Australian Coal Association, 2013). More significantly, there are indications that legislation has been planned and enacted in retaliation for the perceived malevolent attack by environmentalists on coal interests. In a media statement advertising two discussion papers for legislative reform in March 2014, Andrew Cripps, the Queensland Minister for Natural Resources and Mines, stated:

The proposed reforms will allow us to hear from those who are directly impacted by the development rather than extreme green groups in Melbourne or California whose life goal is to create a road block for economic development. These individuals or groups have little or no interest in our state and submit vexatious objections to tie up economically beneficial projects.

A press release from the Queensland Resources Council (QRC) on the same day hints that there was a direct motive to stop objections to the development projects:

These reforms should bring to an end the spectacle of a Canberra-based environmentalist using the Queensland Land Court to object to a Queensland mining project in western Queensland on the grounds of alleged impacts on global climate change (Rouche, 2014).

And again, the QRC press release referred to the leaked document and allegations that the anti-coal movement was operating in a premeditated, orchestrated fashion:

The stalling of projects through litigation was a strategy exposed in the anti-coal movement's funding document Stopping the Australian Coal Export Boom that came to light in early 2012. The same organisations have also been going out of their way to spread fear and loathing in local communities.

The reforms under consideration in Queensland included a "streamlining" of notification requirements, limitations on who has objection rights, and "refining the range of matters" considered by the Queensland Land Court (Queensland Department of Natural Resources and

Mines, 2013). The *Mining and Energy Resources (Common Provisions) Bill* was passed by the Queensland Government in September 2013, with the effect of substantially restricting public objection rights (Queensland Department of Natural Resources and Mines, 2013). Unsurprisingly, the reforms have been met with concerns by groups, including the Environmental Defenders Office (EDO) of Queensland, which suffered an immediate withdrawal of all government funding at the end of 2013.

The polarization that already characterizes the debate over coal in Australia is potentially going to increase as formal and legal avenues for complaint and objection are closed off. It is likely that extra-legal strategies and antics by activists will increase, and will be met with well-funded offensive *and* defensive strategies from the coal industry. There is already evidence that this is occurring: the Minerals Council of Australia (MCA) launched a new website called "Australians for Coal," which is reportedly part of a multi-million dollar broader campaign aimed at re-gaining ground that has been lost to environmental campaigners (MCA, 2014). On the same day, the head of the New South Wales Minerals Council argued in *The Australian* that anti-coal activists are "economic vandals" who also risk public safety, and that tough legal repercussions should be applied.

Globally, the efforts of the anti-coal movement have also been met with a formal counter campaigns crafted and funded by pro-coal interests. One is called "Advanced Energy for Life," funded by Peabody Energy, which seeks to reorient public and political discourse by painting energy poverty as the "world's number one human and environmental crisis" that can be addressed by policies and actions that "increase access to reliable, low-cost power—particularly today's advanced coal technologies" (Peabody Energy, 2014). The campaign imitates the appearance and style of anti-coal and climate change activist strategies, replete with multiple social media platforms. Images on the campaign's website portray the hopes of impoverished youth in Asia and Africa and are accompanied by statements that reinforce the message that coal is essential to their countries' development, such as:

Energy is essential...like food and water. It's the key to a better life for half the world's population, improving health, education and longevity. The world's strongest economies continue to turn to coal as the sustainable go-to fuel and the catalyst that enables people to live longer and better.

The escalating tensions around coal come at a time when mining industries around the world have increasingly recognised the need to engage better with the challenge of more informed and better connected "stakeholders"; for example, Ernst & Young's *Business risks facing mining and metal* lists "social license to operate" as a primary risk for the extractive industries (EY, 2014).

Table. Summary of findings from Galilee Basin Economic and Social Impact Study

Opportunities	Issues
On-the-ground occupational training	Significant impact on current lifestyle
Better work opportunities	Detrimental business impacts/labor strategies
Better business opportunities	Planned development projects
Better infrastructure/services	Funding for infrastructure/services
Financial contributions to the community	Fair compensation for land-access agreements
Introduction of new cultures	Negative environmental impacts, e.g., water
Improved local lifestyles	Localized inflation rates

Source: *Ernst & Young, 2014*

2019-2020 Bushfire Crisis

Australia is no stranger to bushfires; however, the most recent season proved to be unprecedented in many ways. The 2019-2020 Australian bushfire season, colloquially known as the "Black Summer," began with several serious uncontrolled fires in June 2019—throughout the summer, hundreds of fires burnt, mainly in the southeast of the country; the major fires, which peaked during December–January, have since been contained and/or extinguished (Witchey, 2019). Record-breaking temperatures and months of severe drought fueled a series of massive bushfires across the country and also caused ongoing political/social debate regarding the connection between climate change and the bushfire season.

The fires burnt an estimated 186,000 square kilometers (72,000 square miles), destroyed over 5,900 buildings including 2,779 homes, and killed at least 37 people as of 9 March 2020 (Tiernan et al., 2020). An estimated one billion animals have been killed and hundreds of endangered species may

be driven to extinction (Harvey, 2020). Air quality dropped to hazardous levels at the peak of the bushfire crisis (Readfern, 2020). The cost of dealing with the bushfires is expected to exceed A$4.3 billion, especially since tourism sector revenues dipped well below A$1 billion (Butler, 2020). The smoke from the bushfires had moved approximately 11,000 kilometers (6,800 miles) across the South Pacific Ocean to Argentina and Chile by 7 January 2020 (*The Guardian*, 2020). An estimated 307 million tons of carbon dioxide (CO_2) had been emitted from the burning into the atmosphere as of 2 January 2020 (NASA, 2020). The fires heavily impacted various regions in the state of New South Wales from September 2019 to March 2020. A series of states of emergency were declared across Victoria, New South Wales, and the Australian Capital Territory. Reinforcements from around the country were called in to assist fighting the fires and relieve exhausted local crews (Coote, 2020). The Australian Defense force, the military organization responsible for the defense of the country, was mobilized to provide air support to the firefighting effort as well as to provide manpower and logistical support (McLaughlin, 2020). Firefighters, supplies, and equipment from Canada, New Zealand, and the United States helped fight the fires (ABC, 2020). The fires burning throughout the country were completely extinguished by 4 March 2020 (Guy, 2020). An estimated A$500 million was donated by the public at large, international organizations, and public figures for victim relief and wildlife recovery— the relief included convoys of donated clothing, food, and livestock, which were sent to the affected areas until at least 31 March 2020 (Tiernan et al, 2020).

The underlying cause of the intensity and the scale of the bushfires, including the role of fire management practices and climate change, which during the peak of the crisis attracted significant international attention, has been subject to considerable, continuous debate. Amid a conservative government that has received noted criticism for its climate change inaction and support for fossil fuel industries, growing acknowledgement within the nation's politics and society of the issue of climate change resulted in a highly political agenda to the crisis response (Readfern, 2020). The governing Liberal and National parties, accompanied by numerous news outlets associated with climate change denial, firmly deflected responsibility away from the record-breaking drought affecting the country and its associated links to climate change observations and projections (Gergis, 2020). Conversely, scientific experts have asserted the influence of climate change, drought,

prolonged fire weather, and contextualised the limited role of prescribed burning and arson in influencing the crisis (Dunne, 2020). The political and social response to the crisis has been marked notably by political blame shifting, the circulation of large amounts of disinformation, and political disregard for scientific research, expert opinion, and previous government inquiries.

Contesting Coal Mining

Resource extraction has long been a dominant way in which spatial relations have been conceived and configured in the Australian political economy (Bakker & Bridge, 2006, 2008; Bridge, 2009). Australia's foundational legal production of space was the violent 'legal fiction' of *terra nullius* as a settler-colonial society (Langton, 1996; Kedar, 2014), which negated existing Indigenous land rights and allowed the establishment of the land tenure system, whereby land title was granted exclusively by the Crown (Banner, 2005). Australia today is governed by a three-tiered, multi-scalar legal entity of overlapping national, state, and local jurisdictions in which states are responsible for the tenure of land held by the Crown (Bartel et al., 2013; Galloway, 2012). Mineral deposits are Crown property, with states deciding what minerals are subject to state ownership and under what conditions rights to exploit them are granted. The system has produced territories subject to multiple and competing property rights related to land, minerals, and water (Galloway, 2012). Such legal renderings of the landscape in terms of resources and property rights produce a sensibility that gives primacy to resource extraction over other land use values.

Historically, land use tensions have been managed by an evolving leasehold tenure system, allowing governments to set and steer regional priorities and keep competing economic activities relatively separate spatially (Holmes, 2014). However, technological transformation and an influx of transnational capital attracted by neoliberal deregulation have brought mineral resource extraction closer to more traditional agrarian industries (Bayari, 2016). Tensions over conflicting land use priorities have deepened in the latest iterations of the mining boom-bust cycle that began in the early 2000s, with mining investment increasing from 2% to 8% of GDP in a single decade (Tulip, 2014). The resultant rapid industrialisation of rural landscapes has brought mining into conflict with the local economy, resulting in contestations over coal mining on productive farming land in New South

Wales (Morton, 2016), over "fracking" of unconventional gas deposits in Queensland and New South Wales (Turton, 2015), and over the expansion of Adani's Abbot Point coal export terminal on the Great Barrier Reef in Queensland (Horn & Ford, 2015).

The Carmichael has the potential to significantly alter not only the way of life of residents within the communities of Queensland, but also the connectivity of ecosystems within the Galilee: the mine severely threatens the availability of ecosystem services such as clean air, fresh water, and open space (Scott et al., 2015). The project has been opposed by the *Wangan* and the *Jagalingou* peoples, the traditional owners of the land, whose native title is under threat of being extinguished by the Queensland Government, forming the basis for a submission to the United Nations Committee on the Elimination of Racial Discrimination (Lyons, 2018). The Carmichael has especially been criticised for its potential climate impacts and may produce 4.7 billion tonnes of carbon dioxide emissions—0.5% of the remaining carbon budget for limiting global temperatures to 2°C on pre-Industrial era levels (Reddy & Armin, 2018). The mine is likely to have significant impacts on threatened species and on the Great Barrier Reef Marine Park, a world heritage site (Reside et al., 2016). The Carmichael stands to threaten the following industries—pre-existing and potential—in the Galilee: agriculture, forestry, fishing, retail, education/training, transport, postal, food/wine, and tourism, which all provide significant employment in the region (Scott et al., 2015).

An important component of strategic opposition to the mine has involved using litigation and subsequent media coverage to undermine Adani's social licence and that enjoyed by the coal industry more broadly (Konkes, 2018). While not as prevalent nor as transformative as in the United States and other jurisdictions, strategic climate change litigation to challenge government decision-making under planning and environmental law has been used in Australia with varying degrees of success since 1994 (Peel, 2007; Peel et al., 2017). Commonwealth approvals were briefly overturned in the Federal Court after the Environment Minister conceded an administrative error in not properly considering the impact of the mine on two threatened species and remade his decision consistent with the law. The Australian Government responded by accusing environmental non-governmental organizations (ENGOs) of engaging in 'green vigilantism' and threatened to

repeal sections of the *Environmental Protection and Biodiversity Conservation Act* of 1999 (EPBC Act) that provide third-party standing rights to challenge decisions made by the Minister (Clark, 2017). The contestation marked a hostile escalation in the Adani controversy, as governments increasingly sought to place legislative restrictions on critics of the mine and the resources industries more generally, such as by revoking charitable tax status and banning secondary boycotts (Staples, 2014). The status of the mine remains uncertain, with scheduled works repeatedly failing to commence and with the company reducing the scale and scope of the proposal in efforts to secure financing from the increasingly skeptical banking sector (Ludlow, 2018).

A broad coalition quickly began forming to #StopAdani since the Carmichael Coal Mine was first announced in 2010; the opposition to the mine has been documented through images, videos, and text shared online from the get-go (Stop Adani, 2019). Stop Adani as a movement has been online from the very beginning, primarily because social media provided both the ability to access information readily and the ability to share information easily, which has proven to be invaluable in expanding the movement from a local grassroots cause to global environmental movement (Dietz & Engeles, 2017). The movement has been successful in the following ways as a result of the prolific use of the hashtag #StopAdani on social media platforms, including Facebook, Instagram, and Twitter: "Stopped Adani from getting any private funding; Stopped Adani from getting $1 billion from Australian taxpayers; Exposed Adani for its dodgy track record and breaking Australian laws; Building a powerful environmental/social movement; Keeping Galilee Basin coal in the ground" (Stop Adani, 2019).

IV. Methods

#StopAdani: The Landscape of Environmental Activism in Australia adopts an integrative approach understand how Australian environmental activism being shaped by the campaign to #StopAdani. I answer this question using an analysis of environmental impact assessment(s), semi-structured interviews, and social media posts with anti-mine coalition actors. A document- and interview-based stakeholder analysis identified environmental actors connected to the Adani controversy, which have been categorized according to whether they primarily functioned at local, regional, national, or global scales. I synthesize these different approaches in the following analysis.

Environmental Impact Statements

Environmental impact statements (EIS) provides a paradigm, a language, and a discourse by which to critically analyze the distinguishing characteristics of the movement to #StopAdani. I primarily used the environmental impact assessment in my analyses to understand how the mine was being framed within official regulatory practices, thus enabling me to compare/contrast its relative emphasis on particular issues with how and in what ways these issues were framed by activists. The EIS for the Carmichael was analyzed by conducting a discourse analysis of the most-common, frequent, often used words throughout the document, which is based on a word count/frequency computer software package available from *NVivo*.[1]

Interviews

Interviews are the basis for engaging with this study, taking a systemic thinking perspective to describe and understand the social interactions within the communities in each case study (Flood, 2010). Interviewing allows the researcher to gain a rich, contextual understanding of social

[1] The Carmichael Coal Mine and Rail Project has been subject to environmental impact assessment, not only because of the legal requirement to assess the impacts—real and perceived—of the mine, but also notably because of the highly controversial nature of the development project. The assessment was commissioned by both the Australian Government and the Queensland Government to a group by the name of Gutteridge, Haskins, & Davey (GHD)—"an employee-owned multinational technical professional services firm providing advisory, architecture/design, buildings, digital, energy/resources, environmental, geosciences, project management, transportation, and water services"—in an effort to quantify *and* qualify the environmental/social impacts of the mine and the railway. The environmental impact statement on the Carmichael includes an assessment of the potential impacts to the following sectors: cultural heritage, social impacts, air quality, water resources, greenhouse gas emissions, waste, noise/vibration, etc.

processes, and to see beyond group discourse, to identify greater concerns and themes reflecting peoples' values, sense of community and local environment (Greenwood, 1999; Dick, 2000). The processes of interviewing can be used effectively to empower individuals, groups and organizations, and to help them change and develop relevant skills (Swepson et al., 2003). The thesis describes the complexity of the mine, focusing on the richness of evidence and contextual understanding obtained from several data sources, primarily interviews and observations (Gladstein, 1984; Reason & Bradbury, 2001; Yin, 2003). Informants from environmental organizations were interviewed in order to identify their understandings of the ongoing movement to Stop Adani. The interviews with environmental activists were analyzed both to understand the broader landscape of environmental activism surrounding Adani and to understand the most frequent words or themes employed by activists. This was similarly based on a word count/frequency computer software package available from *NVivo*.

Interviews are a source of data within a case study that provides insight into the "on-the-ground" experiences of environmental activists involved in the movement to #StopAdani. The interviews are informative in the sense that the conversations go beyond the so-called recorded politics of environmental activism that are expressed in the EIS published by a compensated firm and the social media posts put forward by an online community. Interviews are able to contextualize the data by not only providing background information on the Carmichael, the Galilee, etc., but also providing unparalleled and unquantifiable experiences that contribute to the evolution of environmental activism in Australia.

Table. Summary of interviews with environmental activists from Australian Conservation Foundation (ACF)

Interviewee	Position	Location
Christian Slattery	Stop Adani Campaigner	Melbourne, Victoria, Australia
John Anstey	Board Member	Melbourne, Victoria, Australia
Tim Chapman	Board Member	Sydney, New South Wales, Australia
Leon Cermak	Board Member	Adelaide, South Australia, Australia
James Eggleston	Board Member	Perth, Western Australia, Australia

Garry Gale	Board Member	Brisbane, Queensland, Australia
David Hood	Board Member	Brisbane, Queensland, Australia

Social Media Posts

Twitter is the go-to social media platform for environmental activists who are members of the community to #StopAdani. The primary reason social media has been instrumental in the proliferation of eco-activists in this context is the "geographic challenge" that confronts the nation of Australia. Australia's so-called geographic challenge is based on a) its geographic isolation from other nations/states, seeing as it is an island nation and b) its population distribution with the majority of its residents living in city/urban centers in highly concentrated coastal regions (Stratford, 2013). The ability for eco-activists to easily *and* readily communicate with each other through social media platforms has been integral to the prolonging of the anti-coal/anti-development/anti-mine movement. Twitter has been and will continue to be the way environmental activists send messages beyond the confines of their own communities.

Social media is considered to be an efficient, yet effective tool to build community support, as evidenced by the number of environmental activists connected to the movement to Stop Adani. Twitter supports retweeting messages posted by other users, which allows an original tweet to be spread extensively within the user networks in Twitter. The application of social media to a case study on the eco-sociological movement to #StopAdani necessitates a critical understanding of a) the spatial/temporal pattern of information diffusion; b) the information being spread extensively across space/time; and c) the locations where people pay attention to information regarding activist movements. Answers to these questions require interdisciplinary research that intersects geography/environmental studies and data/information science.

The Tweets on the Carmichael were analyzed via discourse analysis of the most-common, frequent, often used words throughout the posts by environmental activists. The discourse analysis is based on a data mining script available in *Anaconda/Python* and a word count/frequency script in *RStudio*. Tweets containing the hashtag related to the eco-sociological movement—#StopAdani—were

collected using the Twitter streaming application program interface (API). Thousands of tweets were collected from a) 16 November-7 December 2019 and b) 13-20 January 2020. The time frames correspond to a) the early stages of the bushfire crisis and b) the so-called "peak" of the bushfire crisis during the 2019-2020 Australian wildfire season. The approach to collecting data slightly differed in the early states of the bushfire crisis versus the peak of the bushfire crisis. A more broad, yet comprehensive approach was employed during the climax of the bushfire crisis, which involved an additional code in the script to retrieve biographical information about the user, i.e., the user biography on his/her profile. Tweets collected by the streaming API represent a random sample of tweets generated in real-time. The collected data are encoded in Python, which is parsed into records with a number of attributes, including username, message, and user location. The tweets were then categorized into three different categories according to texts, images, videos, etc. contained within the posts. The information from the tweets was coded based on the criteria provided by Dryzek (2005): sustainable development (SD), environmental justice (EJ), and green radicalism (GR). Survivalism (S) did not appear, or, when it did, appeared to be equally consistent with green radicalism (GR).

V. Results

Adani and the Multiple Scales of Activism

The section draws on an analysis of the data described above—environmental impact statement, interviews with activists, and social media posts—to situate #StopAdani within the broader landscape of environmental activism surrounding the proposed Adani mine. Analysis of the prospective ecological/social impacts of the mine showed that multiple scales are at work in discussions about the mine, with different arguments being advanced at different scalar representations. Exploring the Adani controversy here first in terms of these multiple scalar contestations illustrates how #StopAdani in many ways responds to mining advocacy across various levels of representation and governance by employing diverse argumentation strategies.

Local Scale

Who, *what*, and *where* counts as "local" is highly contestable (Della Bosca & Gillespie, 2018). The local scale here is defined in general terms as the area directly impacted by the mine's footprint in addition to its immediate surroundings. The local scale is mainly contested in the case of the Adani mine because the pro-mining coalition dismisses its relevance and the anti-mining coalition underscores its value. Greg Hunt, the then Minister for Environment of Australia, describes the proposed site of the mine as follows:

> *The Galilee is one of the most remote areas in Australia. When you view it from the air, you realise that it is the deep outback; it is a sparsely vegetated area. I have viewed it myself and you realise that it is an enormous distance from any significant town. It's over 100 kilometres west of Moranbah and against all of that background it is a mining operation in the deep outback of Queensland.* (Sturmer, 2014)

The pro-mine coalition represents the local scale of the mine as merely isolated, remote, dry, and dusty "outback" of little economic or other value except for its geological riches. The "frontier imaginary" (Prout & Howitt, 2009) presented by this depiction of the basin privileges a modernist, urban view in which social and political import is determined by distance from cities—an argument that is inverted at the regional and national scales where the pro-mine lobby tries to cast the urban as a signifier of illegitimacy, as further discussed. Such an imaginary also reinforces the settler-colonial

logic and the aesthetic of *terra nullius* mentioned above, "a self-serving myth of violent theft, conquest and barbarism" (Howitt, 2019), which is basic to Australian nation-building to date, but increasingly fiercely rejected by diverse Australians. In the *terra nullius* imaginary, the land is constructed in its "original state" as an empty vessel, devoid of people and meaning by denying Indigenous ownership of, occupation of, and relationship with the land. The paradigm casts land as mere background to human agency (Plumwood, 1993), which is subsequently claimed by those self-appointed to put the land to "productive use" and save it from being "wasted." The representation is of a country that stands in stark contrast to how the local peoples—the *Wangan* and the *Jagalingou—perceive* the land. Adrian Burragubba, traditional owner and Indigenous lawman, confirms that the site is deeply meaningful, not because it is a coal basin, but because it is home:

> *The Mundunjurra, we call the giver of water. The water comes up and travels through that land, it feeds everything, it feeds the whole area of the Carmichael River to the Belyando River, out to the Burdekin and out to the ocean and it feeds all the surrounding areas of all the other tribes. So, this is the starting point of life. We consider this as our place of where we come from, our dreaming. If this mine proceeds, it will destroy every connection there is with our ancestors and our laws and customs.* (Borschmann, 2015)

The site is not marginal, empty, or viewed from a distance for the local Aboriginal people; the land is their origin and their home. As with other Indigenous groups in Australia, the focus is the life-giving water that emanates outward and sustains deep connections with distant lands, oceans, people, languages, laws, and customs (Martin & Trigger, 2015; Nursey-Bray, 2016), blurring the relation between scales. For the traditional owners of the land, the site is unknowable through the lens of economic productivity and its implicit short-termism. Instead, it is situated in a deep-time that dwarfs the projected lifetime of the proposed mine. Exacerbating the disconnect between the Indigenous owners' deep connection to the site and the extractive logic of settler-colonial Australia (Clark, 2005), the Wangan and Jagalingou Traditional Owners Family Councils' 'sustained opposition to mining on their homelands' has been disavowed by the Queensland and Australian governments (Lyons, 2018). In this disavowal, the government demonstrates both that "a deeply seated settler-colonial mentality endures in Australia within the institutions presiding over mineral governance" (Howlett & Lawrence, 2019) and that many water bodies and processes in Australia are relegated to 'shadow waters' (McLean et al., 2018). Concerns about water are also central to claims made by agriculturalists proximate to the mine site. Farmers speak from a position fundamentally

different from that held by the *Wangan/Jagalingou* peoples, especially as agriculture is a key settler-colonial tool of displacement and dispossession of Indigenous owners (Mayes, 2018 & Rifkin, 2013).

Indigenous relationships with the water that the mine will dispossess them of, if approved, are overlooked, which is problematic given that Adani could be granted unlimited access to groundwater (Long, 2017). The spatial reach of the groundwater in the Great Artesian Basin means that farmers who seem physically distant from the mine site stand to be directly affected by it if the mine extracts the vast amounts it is projected to use (Perceval et al., 2018). What is defined as "local" is thus complicated by underwater relations of a sort that resonate to some degree with Indigenous owners' cross-scalar perspective on water. Settler farmers appreciate the vitality that underground flows of water bring to the landscape, which points to the economic, cultural meanings and sense of belonging water offers to, and prompts in, many Australians (Strang, 2008). Recent severe droughts in the area illustrate that without water farmers' relationships with the land begin to break down (Perceval et al., 2018). Adrian Hollingsworth, a local farmer, observes in an investigative report into the Adani controversy on television sponsored by the Australian Broadcasting Corporation (ABC), "You can't live without food and water. If there's no water, there's no life. There's no food, there's no life. You can't eat coal" (Long, 2017).

The *Wangan* and the *Jagalingou* are gravely concerned about the push by Adani and state/federal governments to open up the Carmichael on their traditional lands because the mine would tear the heart out of the land: "Our traditional lands are an interconnected and living whole; a vital cultural landscape. It is central to us as a People, and to the maintenance of our identity, laws and consequent rights" (Wangan & Jagalingou Family Council, 2013). The Carmichael is large-scale project with far-reaching impacts: the mine would pollute and drain billions of litres of groundwater while obliterating natural springs systems. It would potentially wipe out threatened and endangered species; in other words, the scale of the mine means it would have devastating impacts on native title, ancestral lands/waters, totemic animals/plants, environmental health, and cultural heritage. The mine would literally leave a huge black hole, monumental in proportions, where there were once our

homelands. The cumulative effects are irreversible. Our land will be 'disappeared'" (Wangan & Jagalingou Family Council, 2013).

The Adani controversy is also bringing farmers into closer relation with environmentalists in the anti-mine coalition in ways that further illustrate how local scale is expanded (Slezak, 207). Farmers have enjoyed a privileged symbolic status in Australia and, to the (declining) extent they are represented by political strategists, have been generally inclined towards conservatism (Botterill, 2006 & Hutton, 2012). However, farmers have been pressured by land claims from fossil fuel industries, information has emerged about the vast extent of the proposed mine's water use, and drought has intensified concerns about water. In response, some are forging unlikely alliances with environmentalists, with whom they tend to share concerns about water and a love of place and the common value of social altruism (Colvin et al., 2015 & Hutton, 2012). As recognition of common interests grows, some farmers are becoming increasingly vocal critics of the Adani mine, with groups such as Farmers for Climate Action and Lock the Gate formally allying with the Stop Adani movement (Slezak, 2017).

The trans-site, trans-issue social movement has helped link local farmers and diverse others across the country, including farmers in other localities—the connection demonstrates the formation of a diverse coalition and—as will be further discussed—the scaling-up of local and regional framings of rural politics to national and global levels. (Drew et al., 2018 & Valle de Souza et al., 2018). A notable aspect of the Adani controversy at the local scale is the degree to which there is uniform support for the project from the councils of local government areas (LGAs) surrounding the mine site; for example, the Townsville LGA has agreed to help fund infrastructure upgrades in exchange for being designated as a "hub" for the fly-in-fly-out workforce (Quiggin, 2017). Local councils emphasise the economic benefits of the Adani mine, despite expert witness testimony in the Queensland Land Court that Adani's economic modelling vastly inflated projected jobs growth figures (Branco, 2015) in addition to and recent reviews concluding that while mining imposes significant costs on LGAs, the benefits in terms of royalties accrue instead to state governments (Drew et al., 2018 & Valle de Souza et al., 2018).

Regional Scale

The regional scale is defined here as relations between spatially contiguous groups of LGAs within states that suggest considerable inter-regional and intra-regional tensions both between regions within Queensland and between Queensland and beyond. The aforesaid tensions between the urban south-east and rural central, northern, and far-northern regions have resulted in conflict between the Left and Right factions of the state Labor government over subsidies for the Adani project (Kenny, 2017 & Williams, 2017). Tensions have also emerged between New South Wales and Queensland over the potential impact of the Adani mine on the economic viability of established coal regions in New South Wales if Adani floods the market with a massive new supply of coal (Murray et al., 2018).

Core to the pro-mine coalition's framing of the mine are the project's purported positive economic benefits for its region, given that—as pro-mine advocates emphasise—the region is already characterised by high unemployment (Terzon, 2018). Reflecting the normative characterisation of regions in Northern Australia as problem or resource (Pritchard, 2005), the pro-mine coalition presents the mine as a chance to transform into a "resource region" a current "problem region" empty of value and of jobs (full of economic value). Echoing the frontier imaginary mentioned above, the Queensland Government's, 2013 Galilee Basin Development Strategy, for example, lays out the government's goal to enable "first movers" (mining companies) to "open up" the region and provide "jobs and growth" (Lyons, 2018).

The pro-mine coalition casts this regional transformation as beneficial and supportive and frames opposition to the mine as aloof and distant (Rickards, 2017). Playing on a class politics, proponents of Adani also dismiss the anti-mine coalition as "inner-city greens" who speak from a place of spatial illegitimacy and irrelevance (Richardson & Jensen, 2003). Industry lobby group, Queensland Resources Council spokesperson, Michael Roche, put it thus: 'Everyday Queenslanders are increasingly frustrated that a handful of inner-city green activists can continue to deny communities crucial jobs' (Patrikios, 2015). Such sentiments are echoed by Minister for Resources and Northern Australia, Matthew Canavan, who has observed:

I do think when you are in Sydney and you can grow a hipster beard and ride your bike to work after you have had a smashed (avocado) for breakfast, you get a very different worldview than when you are worried about your job, you are worried about whether your kids are going to get a job. (Martin, 2016)

The federal government has also framed mine opponents as spatially and emotionally distant. In 2017, for instance, then Treasurer, now Prime Minister, Scott Morrison waved a lump of coal at ministers in federal Parliament, saying "Don't be afraid! … It's coal, it was dug up by men and women who work and live in the electorates of those who sit opposite" (Murphy, 2017). Mining proponents draw on an urban/rural binary that has been foundational to mainstream Australian national identity and try to transpose it onto southern/northern states in the process of constructing such spatial identities. By explicitly linking economic benefits to a geographical frame and "community" as regional Queensland, those proponents draw on a common trope in Australian environmental politics, spatially othering their opponents as an urban elite unconcerned with the material realities and lived experiences of regional Australians, as disconnected from the localities they purport to speak for (Rickards, 2017; Tranter, 2004). Framing the issue as one of jobs allows mining advocates to play up the power and wealth of activists while downplaying the corporate power and wealth associated with the mine (Askland & Bunn, 2018).

The tactics used by activists associated with the Australian Conservation Foundation (ACF) stand in stark contrast to the previously mentioned strategies: Social media has been able to establish a connection between local, regional, national, and global concerns relating to the economic/social impacts of the mine by bringing attention to the inherent contradictions of *economy* v. *environment* (ACF, 2019). #StopAdani has focused on the contradictions between economy and environment—the economic infeasibility of fossil fuel extraction and the environmental injustices resulting from coal mining—which allows the movement to make new scalar connections. Activists are capable of sliding between regions/states in Australia in their online conversations by drawing on the argument of economic development versus environmental conservation: "The Adani controversy is constituted as a contest between types and number of jobs produced by the mine in central Queensland and the threat that climate change poses to the Great Barrier Reef in coastal Queensland" (Sica, 2015). The argument that the opening up of the basin will lead to more jobs,

more money across scales is contradicted by the social media posts of campaign organizers who point to the dodgy track record of Adani: Adani has grossly exaggerated job creation figures months before it publicized its economic impact statement during the federal/state elections (ACF, 2019). The new connections between scales, such as the importance of environmentally sustainable job creation at the local level and the significance of curbing greenhouse gas emissions at the global level, is a defining characteristic of the opposition to the Adani mine.

Claims relating to job creation are clouded by Adani CEO, Jeyakumar Janakaraj's own assertions about the automation of the project "from pit to port" (Fraser, 2011):

All the vehicles will be capable of automation. When we ramp up the mine, everything will be autonomous from mine to port. In our eyes, this is the mine of the future. (Jacques, 2015)

The question of automation introduces further inter-regional and cross-scale factors. The powerful Construction, Forestry, Mining, Maritime and Energy Union (CFMMEU) has been a supporter of the mine (although, not of government subsidies, against which the union rallied in 2017), using its influence in the Queensland Labor Party to resist opposition to the mine (McKenna, 2017 & Williams, 2018). The support is based on a desire to secure new jobs for its members. However, automation means that the number of new mining jobs will be less than expected and that many jobs are likely to be based in urban centres from where automated equipment is operated (McKenzie et al., 2014 & Rainnie et al., 2014). The regional displacement of jobs introduces a 'topological twist' (Allen, 2011) into the pro-mine coalition's argument to the extent that the proximal relationship being forged is between city workers and the mine site, not local workers and the site. The displacement also points to scalar tensions within the union movement, with the CFMMEU's support for mine ignoring both the emissions-intensive character of the industry and the strategic shift that the wider union movement is undertaking nationally to tackle transition risk (the impacts of decarbonisation policies) and generate long-term, more sustainable development and employment pathways for members (Barton, 2018; Fairbrother, 2015; Snell & Fairbrother, 2011).

National Scale

The national scale is invoked by the pro-mine coalition in assertions about the benefit of foreign investment to local and regional economies, stacking national, regional, and local scales together in a manner described by Sica (2015). The invocation suggests that political actors view the mining controversy as an issue to be fought and won. The Adani mine is nationally significant because of the investments it brings with it.

Mining proponents further frame the national economic significance of the project over sovereign risk. A similar risk was invoked during a previous campaign against a mining resources tax, in which the threat of capital flight from Australia was used to great effect (Gilding et al., 2012 & Kellow, 2016):

The victims of the shocking economic vandalism we are witnessing today are the tens of thousands of Australians who will not get the jobs … Our new culture of sovereign risk is a form of economic self-harm. We stand to damage ourselves profoundly. (Sheridan, 2015)

The framing of economic risk in terms of sovereignty is inherently scalar because sovereignty invokes notions of borders and territory—concepts with a great deal of currency in the Australian geographical imagination, especially given its history as a settler-colonial nation (Anderson & Taylor, 2005; Burke, 2008; Tascon, 2002). The distribution of economic justice in regional areas is linked to national concerns about sovereignty; thus, mining proponents produce a powerful discursive tool that physically situates abstract notions of capital flows within a landscape familiar to its intended audience (Jolley & Rickards, 2019). The strategy of "stacking" scales, e.g., national/regional frames, supports the argument of opening up the basin for the sake of economic development, progress, etc.; in other words, the creation/loss of jobs in one sector will lead to the creation/loss of jobs in another sector (Sica, 2015). The aforementioned strategy opens up space for government entities to offer proposals to mitigate the environmental/social impacts from the development projects, such as the Northern Australia Infrastructure Facility (NAIF) to provide a billion-dollar loan to Adani (Humphries et al., 2017). The concept of justice is an ideal alluded to in arguments in favor of coal mining in order to justify the further exploration of natural resources within Australia (Anderson & Taylor, 2005; Burke, 2008; Tascon, 2002).

Anti-mine coalition actors produce an effective counter-scale frame by pointing to the economic risk posed to taxpayers, the reputational risk to investors, and the risk of investing in a massive new coal project at a time when the coal industry is in decline. The national scale is also important to the pro-mine coalition because it provides the legal framework through which federal environmental approvals have been challenged. The way third-party litigation is represented by mine proponents reveals attitudes about how democracy is performed in Australia.

The pro-mine coalition emphasizes the role of the legislature in a parliamentary democracy. The pro-mine coalition also defends the rights of elected representatives to get on with their job, which it sees as the pursuit of economic growth for their constituency and the nation. Community sector advocacy is framed not as about the public good, but as illegitimately serving a narrow range of interests at the expense of economic growth and public choice (Staples, 2006). Mining proponents have worked to delegitimize the use of judicial third-party standing rights, which they decry as "lawfare" (Konkes, 2018). The term *lawfare* emerged from the War on Terror as an effort to discursively delegitimize legal actions that restrict security agencies (Dunlap, 2008; Goldstein & Meyer, 2014). Similarly, in framing litigation as an abuse of power, mining proponents seek to morally delegitimize the environmental movement. Drawing on traditional scalar representations of governance, in which the legal and the political are clearly delineated through the separation powers, mining proponents discursively obscure the role of the judiciary as a check on executive power. The anti-mine coalition's efforts to seek judicial review are dismissed as "eco-terrorism" and economic sabotage.

The impact of this discourse is to frame the state, i.e., Queensland, Australia, as the only legitimate state at which power can be exercised. Efforts to bypass electoral politics are represented as criminal interference with the state's territorial integrity and sovereignty—a profound transgression in a political imagination within which borders have been reified as symbols of national identity (Anderson & Taylor, 2005; Tascon, 2002). The sentiments are clearly reflected in statements from federal government MPs such as George Christensen member for Dawson in Queensland, or then Environment Minister, Greg Hunt, who respectively have stated that:

An endless round of legal challenges from the extreme green eco-terrorists against projects such as Adani's Carmichael Mine are destroying this country's reputation and we risk sending investors elsewhere to secure the fossil fuels they will need for decades to come. (Christensen, 2016)

This is not some community-based grassroots campaign. This is a US-style top-down litigation approach which expressly seeks to use third party involvement in US-style litigation to— again I quote—"disrupt and delay key projects and infrastructure." (Hunt, 2015)

The anti-mine coalition, which consists of local farmers, Aboriginal groups, and #StopAdani campaigners, places an emphasis on both the role of the judiciary to keep a check on executive power and the democratic functions of the community sector—the #StopAdani movement does not speak for everyone opposed to the mine but, but instead is a subset of the activism against the mine. #StopAdani draws on campaign strategies, such as demonstrations/protests of activists gathered en masse, e-mail/letter correspondence with elected officials, and community meetings/town halls across the country. Interview participants confirmed the idea that they are representative of the community by emphasizing the constituency derived from their membership base, which is a conception of democracy in which community representation cannot be reduced to territorially defined electoral politics:

I draw legitimacy from (our organisation) as a movement. We do not take any money from government, we do not take any money from business and we never have. We only exist … because individuals give us money to enable us to exist. And, we only have political power because individuals, communities, families take action as part of (our) movement … [the] monthly donors or the … online and physical supporters who have done something … in the last year or so. They give, I think, a legitimacy to act that's very real and very genuine. (Christian Slattery, Australian Conservation Foundation, #StopAdani Campaign Manager, Interview in Melbourne)

The pro-mine coalition produces a scale frame that valorises the vertical hierarchies of state, while the anti-mine coalition produces a counterscale frame within which power is distributed across the community with constituencies that can be measured in terms of membership. Traditional topographies of territorially bounded electorates become less relevant when distributed networks of constituents, represented by civil society actors, are organized in ways that allow them to reach out across space and scale to make claims of legitimacy in speaking for the environment (Iveson, 2014). Spatial maneuvering is seen to be necessitated by deficiencies in political structures that do not properly reflect community values:

When a politician is doing the math on reelection, it does not matter if there is a widely held view that there needs to be more action on climate change; if it's not the thing that's going to change the vote it's quite easy to ignore it when thinking about re-election [...] and the more dangerous [developments are] attempts to delegitimise [us] by … trying to create limits on what charities can and cannot do, making it harder for advocacy charities to hold charitable status, tightening the criminal laws against protest, making it harder to whistle-blow; any number of elements [that] … just close out the democratic space. (Christian Slattery, Australian Conservation Foundation, #StopAdani Campaign Manager, Interview in Melbourne)

The Australian political economy that is based on the exploration of natural resources such as coal has been jeopardized by the protests against mining; however, the multinational conglomerate is not willing to stand down without a fight. The Adani mining company's "legal intimidation" tactics against community groups are a "threat to democracy" and "gravely concerning" say eminent members of the legal profession, including a former supreme court judge and an expert on corporate lawfare (*The Guardian*, 2019). The law firm hired by Adani to write a strategy document on the way to cope with opposition to the mine—AJ&Co.—advised the company to adopt an aggressive legal posture against opponents: "The documents suggested Adani should trawl social media for evidence of bias among activists and decision makers; the documents recommended using the legal system to bankrupt poorly resourced opponents, silence commentators and put pressure on the government" (*Australian Broadcasting Corporation*, 2019). Environmental activist communities, Aboriginal/Indigenous traditional owners and high-profile international journalists have all confirmed recent interactions with the firm in a manner consistent with the strategy document, which is a threat to the fundamental civil right to free speech (*The Guardian*, 2019). The Australian environmental movement has been successful because of its appeal to not only morality, but also legality in regard to the continuous exploration of natural resources, such as coal.

Global Scale

The global scale is used here to encompass relationships that extend beyond Australia's national territorial borders, including transnational connections. Mining proponents counter the dominant framing of climate change as a moral hazard by invoking issues such as energy poverty in India, as highlighted by the-then Trade Minister, Andrew Robb:

This coal deposit will light up 100 million homes for 100 years. Critics should consider what that meant for those people who live without electricity. You look around the world on the development front and there has never been an

underdeveloped community that has got out of that trap, out of the circumstance of poverty, extreme poverty, without electricity. (Koutsoukis, 2015)

Mining proponents also directly echo the American coal industry in depicting coal as a solution to 'the crisis of global energy poverty' (Demetrious, 2017). The proponents seek to wedge their opponents into a discursive space wherein they are forced to argue a case at odds with segments of society that might otherwise support them, primarily by framing access to coal-fired energy in moral terms. Tactics are countered by the anti-mine coalition in a reframing of the fossil fuel industry as a predatory force opportunistically preying on the weak and vulnerable:

Basically, the government is using the drug dealer's defence—the argument that if we do not dig up this coal and burn it, somebody else will. This drug dealer's defence is unethical and mocks the efforts of countries that are working to reduce global climate pollution, as Australia agreed to do under the Paris Agreement. (O'Shanassy, 2017)

The #StopAdani movement also draws upon the global scale in two other ways: 1) the transnational nature of the anti-fossil fuel movement and 2) the global character of climate change. Interview participants operating at a national scale were cautious about characterising the campaign in global terms—preferring to instead emphasise the uniquely Australian relationship with coal. Activists working within international organizations, such as Conservation International, Greenpeace, Surfrider Foundation, were more keenly aware of the significance of the Adani controversy within transnational activist networks:

We have got [volunteers] in over 180 countries … so this campaign has been seen as relevant to our entire global network. We work with our volunteer groups on the ground in their local communities, in Queensland and around Australia but it's also something we have been able to collaborate quite closely with our colleagues overseas … We have held actions in other countries targeting banks that might support the project; we have had teams call on the Australian government and hold actions at embassies and consulate offices because they know this coal being dug out of the ground will affect them. (Christian Slattery, Australian Conservation Foundation, #StopAdani Campaign Manager, Interview in Melbourne)

The Galilee Basin has been identified by numerous environmental organizations, such as Greenpeace, as one of 13 global "carbon bombs"—proposed fossil fuel projects with the combined potential to raise carbon dioxide emissions by 20 per cent; thus, the impact of the Adani mine is of global significance and extends beyond Australia's territorial confines, folding a remote site in western Queensland into planetary systems of climate and politics (Milman, 2013 & Voorhar, 2013).

Table. Scalar frames employed by environmental activists in the Adani controversy

Levels of Scalar Representation	Pro-Mine Coalition Arguments	Anti-Mine Coalition Arguments
Local	• Mine site is of low economic value	• Mine site is of high ecological value • Water is a source of life, custom, and law
Regional	• Mine offers economic justice to the region • Mine is a source of regional identity	• Mine threatens the clean energy, tourism sectors in the region
National	• Mine opposition presents a sovereign risk to the nation • Protestors should respect territorially bounded political representation • Litigation against the mine or its supporters is an abuse of process; litigants are illegitimate	• Mine poses massive reputational risks to the Australian nation • Constituencies have a right to be heard about the mine, not just residents in the political seat in question • Political process lacks transparency and accountability • Judiciary has an important role as a check on political power • Law reform is necessary to allow the judiciary to judge environmental decisions on their merit, not just the processes followed by politicians
Global	• Coal mining is an issue of global economic justice • Coal mining is an issue of global energy justice	• Coal mining is an issue of global environmental justice

Source: *Jolley & Rickards, 2019*

The above section shows the complicated landscape of environmental activism in which the #StopAdani movement is situated. The results also show that #StopAdani has been a central dimension of resistance to the Adani mine, and how, as a social movement, #StopAdani has been able to engage with and contest pro-mining politics across a range of constructed scales. The next section turns to a closer analysis of the specific environmental discourses that activists within the

#StopAdani movement have used to contest the pro-mining arguments described above. The examination of these discourses reveals that one way activists have been able to transcend the limitations of particular scalar framings has been through reference to ideas of *environmental justice*; however, the strategies of online activists have evolved considerably over time, changing in particular after the Australian bushfire crisis.

Environmental Discourses of the #StopAdani Movement

An analysis of the word content and discourses characteristic of the EIS vs. social media data suggests that the green discourse adopted by the EIS on the Carmichael greatly differs from the green discourses adopted by the interviews with environmental activists from the Australian Conservation Foundation (ACF) and the social media posts by eco-activists using the hashtag #StopAdani. In general, the EIS adopts the discourse of *sustainable development*, while the online conversations of eco-activists adopt the discourses of *environmental justice/green radicalism*. The EIS, however, is fixed whereas the #StopAdani movement continues to evolve as an online movement. As such, the discourses characteristic of the #StopAdani movement have also continued to evolve, exhibiting in particular a shift from *green radicalism* in the early stages of the bushfire crisis to *environmental justice* during the so-called "peak" of the bushfire crisis. A word frequency analysis demonstrates that the ideas of *conservation* and *management* dominate the EIS, whereas the ideas of *ecology* and *justice* are the most noticeable concerns of both interviewed activists and online users (**Figure 1**). The most frequently used words within the EIS are "strategy," "project," "conservation," "management," "offsets"; the most frequently used words among interviewees are "justice," "ecology," "community," "ecosystem," climate change"; the most frequently used words within social media posts are "aboriginal," "indigenous," "title," "native," "rights."

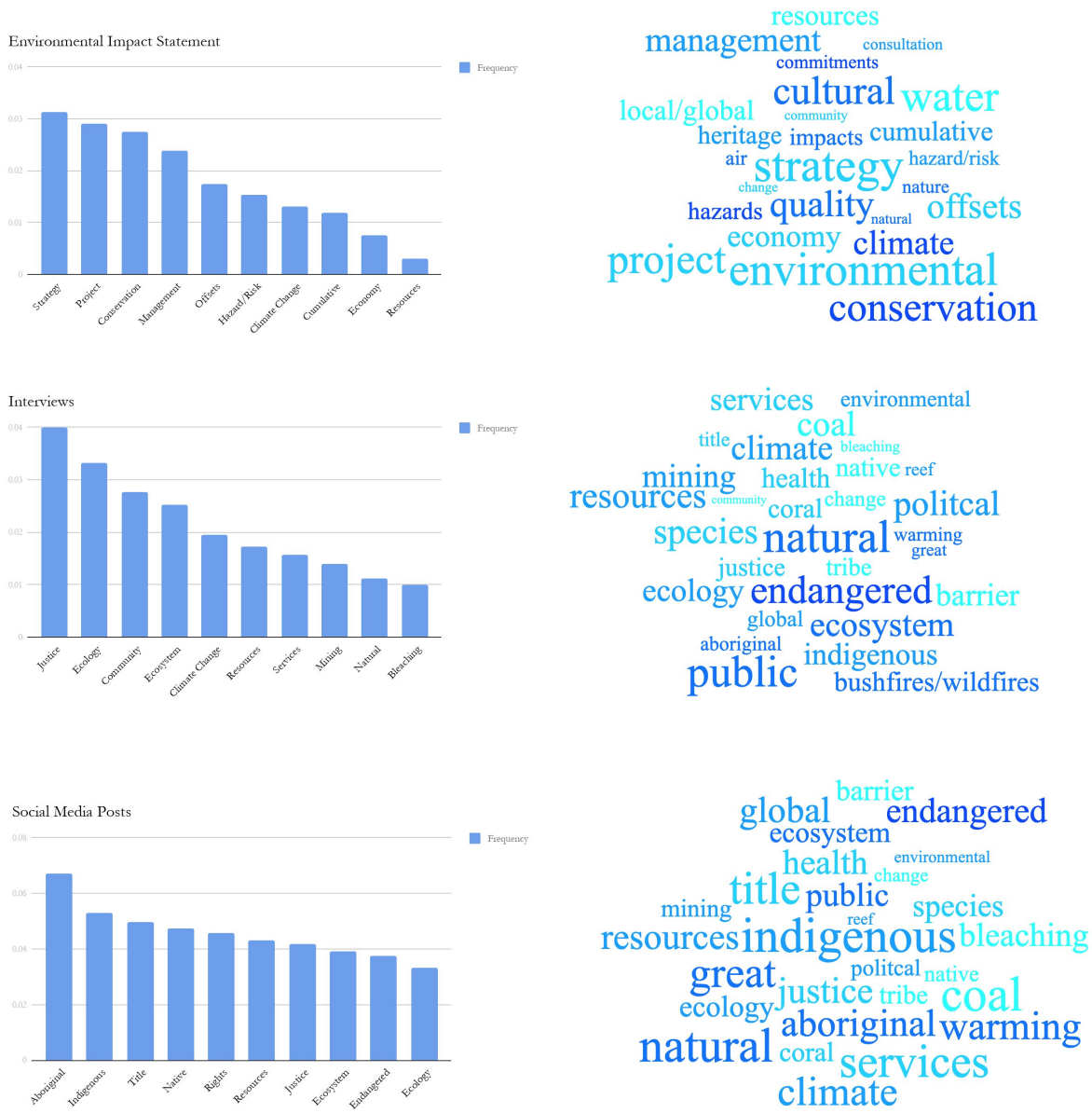

Figure 1. A word frequency analysis of a) environmental impact statement, b) interviews, c) social media posts.

Environmental Impact Statements: A word frequency analysis of the EIS on the Carmichael shows that the primary discourse adopted by the document is sustainable development. *Strategy*, *project*, *conservation*, *management*, *offsets*, *hazard/risk*, *climate change*, *cumulative*, *economy*, and *resources* are the most frequently used words in the document, which are derived from the language of sustainable development:"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Dryzek, 2005). The document acknowledges the

existence of networked social/ecological systems, yet underscores the importance of the "business as usual" model that equates development projects to economic growth.

The EIS places an emphasis on the idea that economic growth, environmental protection, and long-term sustainability are interconnected and interrelated, which is a defining characteristic of the discourse of sustainable development. Dryzek (2005) states that the discourse of sustainable development establishes a connection between environmental change and economic/social progress, a connection that is notable in the ideas that are mentioned throughout the document, such as the necessity to develop a strategy to mitigate the environmental/social impacts of the coal mine in order to realize the full potential of such a resource-rich region. The EIS is premised on the idea that natural resources are the currency on which the capitalist economic system not only survives, but also thrives in its assessment of the potential impacts of the coal mine.

A theme that emerges from the discourse of sustainable development, which is mirrored by the EIS, is the concept of *natural capital*: the natural resources through which humans derive a wide range of services have economic/financial value. *Sustainable development* as a language is a reformist, yet imaginative discourse that attempts to dissolve the conflicts between environmental, economics, and social justice concerns, which is the objective of the EIS in its broad, yet comprehensive assessment of the impacts—realized or potential—of a project (Dryzek, 2005). A substance such as coal has natural capital that might be worth exploiting if and only if the benefits outweigh the costs, according to the principles of sustainable development that are reflected in the EIS.

Interviews: A word frequency analysis of the interviews with activists from the Australian Conservation Foundation (ACF) shows that the discourse adopted by environmental activists is green radicalism. *Justice*, *ecology*, *community*, *ecosystem*, *climate change*, *resources*, *services*, *mining*, *natural*, and *bleaching* are the most frequently used words throughout the interviews, which are derived from the language of green radicalism: "an approach in which environmental protection assumes its position alongside economic/social issues in decision-making that affect the environment" (Dryzek, 2005).

The interviewees acknowledge the fact that the organic relations between human beings and the environment have been transgressed through the proposition of a new coal mine.

The interviewees place an emphasis on the idea that social, economic, and political structure are inseparable, which is a defining characteristic of the discourse of green radicalism. Dryzek (2005) states that the discourse of green radicalism established a connection between environmental change and social transformation, a connection that is notable in the ideas that are mentioned throughout the interviews, such as the importance of a balanced, steady relationship between human beings and their surroundings and the threat posed to the socio-ecological order by the opening up of a previously untapped region of natural resources. The interviewees are from the perspective that nature is a living, breathing entity that is only able to exist as an interconnected, interrelated system (ecosystem) that is being jeopardized by the exploration of natural resources and the exploitation of human-nature relations.

A theme that emerges from the discourse of green radicalism, which is expressed in the conversations with activists, is the concept of *status quo*: the existing state of affairs in regards to socio-ecological and political issues. *Green radicalism* as a language is a radical and imaginative discourse that completely rejects the current societal order and advocates for the transformation of self and society, which is the objective of environmental activists in their establishment of a social/environmental movement that stands in opposition to development projects such as coal mines (Dryzek, 2005). A project such as the Carmichael has the potential to prolong the *status quo* by continuing a relationship between humans and nature based on an unequal exchange—the extraction of natural resources for the progress of society.

Social Media Posts: A word frequency analysis of the tweets using the hashtag #StopAdani shows that the discourse adopted by eco-activists online is environmental justice. *Aboriginal*, *indigenous*, *title*, *native*, *rights*, *resources*, *justice*, *ecosystem*, *endangered*, and *ecology* are the most frequently used words among social media users, which are derived from the language of environmental justice: "environmental justice is an important part of the struggle to improve and maintain a clean and healthful

environment, especially for those who have traditionally lived, worked and played closest to the sources of pollution" (Dryzek, 2005). The social media users acknowledge the complex interactions between human beings and the environment and underscore the fact that environment and society *can* and *should* exist.

The social media posts place an emphasis on the idea that justice is measured by the "triple bottom line": people, planet, profit. Dryzek (2005) states that the discourse of environmental justice establishes a connection between environmental degradation and social injustice, a connection that is notable in the ideas that are mentioned among social media users, such as the exploration of natural resources, i.e., coal in this context goes hand in hand with the exploitation of human communities, i.e., Aboriginal/Indigenous. The social media posts are premised on the idea that equality is all-encompassing, inclusive of environmental, social, *and* economic concerns, which is evidenced in the social, economic, *and* political structures that uphold the venture of coal mining.

A theme that emerges from the discourse of environmental justice, which is mirrored by the social media posts, is the concept of *equality*: the state of affairs in which all people within a society *and* all components of an ecosystem have the same status in possibly all respects. *Environmental justice* as a language is a vernacular that focuses on the importance of community voice, the inequitable vulnerabilities to change, and the demands for community sovereignty, which is the framework of eco-activists who describe not only the legality of occupying the lands on which Aboriginal/Indigenous tribes claim native title, but also the morality of exploiting the territory with which members of the *Wangan/Jagalingou* community possess a spiritual connection (Dryzek, 2005). A fossil fuel such as coal has the power to not only dramatically contribute to anthropogenic climate change through its combustion, but also significantly alter the set of relations between an entire community and its sense of belonging.

The findings from this thesis also suggest that the green discourses adopted by environmental activists are subject to change depending on the context in which eco-activists are contributing to the conversation. A social media analysis demonstrates that the primary discourse adopted by

eco-activists using the hashtag #StopAdani changes from *green radicalism* in the early stages of the bushfire crisis: 16 November-7 December 2019 to *environmental justice* during the climax of the bushfire crisis: 13-20 January 2020 (**Table 1**). The green discourses adopted by environmental activists in order from most-often used to least-often used are green radicalism (56.9%), sustainable development (27.6%), and environmental justice (15.4%) during the early stages of the bushfire crisis, while environmental justice (54.8%), green radicalism (32.6%), and sustainable development (12.6%) during the climax of the bushfire crisis.

Table 1. Summary of the breakdown of environmental discourses among eco-activists using the hashtag #StopAdani.

	16 November-7 December 2019	**13-20 January 2020**	**16 November 2019-20 January 2020**
Sustainable Development (SD)	2606	3151	5757
Environmental Justice (EJ)	1457	13759	15216
Green Radicalism (GR)	5384	8190	13574
Total	9447	25100	34547

A discourse analysis of the tweets using the hashtag #StopAdani shows that the shift from the green discourses adopted by eco-activists from green radicalism to environmental justice coincides with the turning point in the 2019-2020 Australian bushfire crisis. The predominant discourse adopted by environmental activists in the early stages of the bushfire is *green radicalism*, while the predominant discourse adopted by environmental activists during the climax of the bushfire crisis is *environmental justice* (**Figure 2**). A social media analysis of the online discussions surrounding the mine reveals that a conversation dominated by the discourse of environmental justice changes based on the current socio-environmental setting.

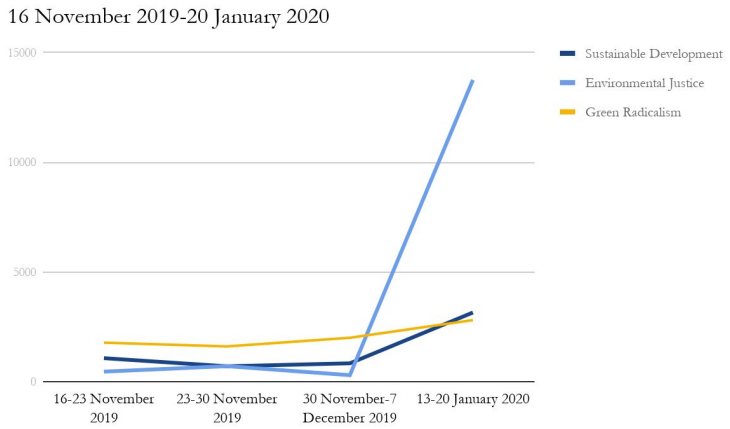

Figure 2. A social media analysis of the environmental discourses adopted by eco-activists using the hashtag #StopAdani on Twitter.

The findings from this study show that environmental activists pivoted from a *radical* discourse aimed at challenging the status quo of natural resource extraction being equated to economic, social, etc. progress to a *transformative* discourse aimed at changing the way we as human beings conceptualize our surrounding environment (Dryzek, 2005). A word frequency analysis of the tweets using the hashtag #StopAdani demonstrates that the discourse adopted during the early stages of the bushfire crisis is green radicalism with keywords such as *climate change*, *ecosystem/ecology*, and *coral reef* while the discourse adopted during the climax of the bushfire crisis is environmental justice with keywords such as *aboriginal/indigenous*, *community*, and *native title* (**Figure 3**). Radical discourses such as green radicalism frame the world as being in ecological peril, with humanity's survival positioned on a precipice, while reformist discourses such as environmental justice recognize the existence of ecological/social problems and frame issues of environmental degradation and social injustice as interdependent (Dryzek, 2005).

Figure 3. A word frequency analysis of tweets using the hashtag #StopAdani a) 16 November-7 December 2019 and b) 13-20 January 2020.

Dryzek (2005) explains that green radicalism and environmental justice are similar, yet different green discourses: similar in vocabulary, different in perspective—green radicalism's objective is to question the very existence of social, economic, and political structures, while environmental justice's objective is the question the way social, economic, and political structures might be bettered or improved. Environmental activists are able to establish a connection between a highly controversial development project such as the Carmichael and the most intense bushfire season—in terms of number of hectares burned—in Australian history because of the language that is afforded by the discourse of environmental justice; in other words, the bushfires crisis and the coal mine are not seen as mutually exclusive events, but instead complementary examples of the threats posed by human beings to the natural environment: "Pervasive human-drive decline of the environment points to the need for transformative change #StopAdani " (Australian Conservation Foundation, 17 January 2020 @ 10:39am AEST, Twitter). Dryzek (2005) states that the emphasis on ideas of equality, fairness, and justice, which is a defining characteristic of the discourse of environmental justice, is based on the connectivity of issues of environmental change, economic inequality, and social transformation.

The shift in the online conversation surrounding the mine is evidenced by both quality in terms of the environmental discourses adopted by online activists *and* quantity in terms of the number of social media posts using the hashtag #StopAdani. The number of posts in the early stages of the bushfire crisis: 16 November-7 December 2019 is 9,447, while the number of posts during the

climax of the bushfire crisis: 13-20 January 2020 is 25,100, which is a change of +165% in total or +55% per week (**Table 1**). The number of social media posts *pre-bushfire* versus the number of social media posts *post-bushfire* shows that the campaign against the mine has been able to include a greater number of participants; in other words, #StopAdani has been able to include more voices into a more robust discussion of the prospective environmental/social impacts of the Carmichael (Dryzek, 2005). The peak period of the bushfire crisis is closely aligned with an inflection point in the data of green discourses, in terms of both quality and quantity. The shift in the language used to describe the mine around the time of the bushfires symbolizes the capacity for dramatic events to allow for connectivity—connectivity among the environmental activists who are expressing their concerns via social media *and* connectivity among the ecological/political/social issues that arise from further extraction of fossil fuels, e.g., greenhouse gas emissions, natural disaster management, human rights violations, etc.

VI. Conclusions

The Carmichael is a significant new space of contestation in conflicts over coal mining and climate change in Australia. Proposed as one of the largest new coal mines in the world, the mine has become a flashpoint between two broad coalitions: 1) the pro-mine coalition, consisting of governments, elements of the media, and mining interests, and 2) the anti-mine coalition, consisting of community groups, environmental non-government organizations, activists, Indigenous communities, and farmers. The thesis demonstrates how the coalition of environmental activists employs environmental discourses across multiple constructed scales to represent and contest the controversy. The research finds that the #StopAdani movement is adept at negotiating scales—spatial and temporal—that increasingly define our social worlds. The discourse analysis of social media posts using the hashtag #StopAdani shows that the predominant discourse adopted by environmental activists is *environmental justice* and the 2019-2020 Australian bushfire crisis is a climax in the movement against the mine at which point the primary discourse switches from *green radicalism* to *environmental justice*.

The study is oriented towards a deep future horizon in which the controversy over development projects such as mines represents an opportunity to reshape existing social and political orders. The sorts of scalar tactics documented here are likely at work in other resource extraction controversies, highlighting the need to attend to how scale may be being used to obscure irrationalities and injustices in extraction projects, and the potential for counter-scale frames to help destabilize fossil fuel regimes.

An Ongoing Contestation

The findings from this thesis suggest that the pro-mine coalition produces an image of Adani that valorizes capitalist economics, in which relations are fundamentally transactional and understood as an economic equation whereas the anti-mine coalition paints a picture of Adani that scrutinizes "business-as-usual" practices that proliferate the impacts of anthropogenic climate change, such as the further development of coal mines.

The pro-mining coalition draws on and is situated within an institutional framework in which economic, political, and legal systems are geared towards allocating and extracting resources (Bakker & Bridge, 2006). Social movements have long contested such extractive industries. The emergence of new types of social movements, including transnational emergence of environment movements—the 'largest social movement in history' (Coglianese, 2001)—places new pressure on mining entities, as does ongoing pressure for financial institutions and endowments to divest from fossil fuels (Glomsrød & Wei, 2018).. The pro-mine coalition's desire to preserve aspects of the *status quo* from short-term contingencies helps explain a) why threats such as climate change are denied and/or minimized or b) why disruptions to established models of resource-driven economic growth must be delegitimized and/or silenced (Jolley & Rickards, 2019).

The spatial terrain occupied by the pro-mine coalition is becoming similarly disoriented. The developmentalist paradigm adopted by those who support the mine becomes increasingly difficult to make sense of. A vantage that centralizes so-called sustainable development overlooks the global forces that defy topographical spatialities; in other words, the perspective is fixed within a field of vision wherein power, capital, and resources flow up and down through nested scalar hierarchies (Kurtz, 2003). The pro-mine coalition is increasingly finding its conventional map of the world in disarray—whether it be the cascading economic, physical, and social impacts of global climate change and their far-reaching reverberations, or the ways in which politics are being reconfigured by diffuse and distributed topological networks of organized citizens. The scalar frames employed by the pro-mine coalition are not adequately equipped to address the ecological, social, etc. impacts of the mine in its entirety.

While it is possible to understand the anti-mining coalition in relation to the pro-mining coalition, social resistance to mining is more than just a reaction to the scale frames produced by the pro-mine coalition and the Australian polity more broadly. Instead, the actors in the controversy are creating discursive and material spaces through which new expressions of social, legal, economic, technological, and political organisation in Australia and abroad can be (re)imagined. Activists' role in the Adani controversy is part of a larger social transformation that speaks to the symbolic nature

of this one issue. Interview participants were optimistic that Australians can build a new politics wherein the values they understand as widely distributed at a personal scale can be better reflected at the scale of electoral politics, all the while cognisant of the challenges facing society at large, e.g., climate change.

Activists also communicate a real sense that coal is symbolic not just of old technology, but also of an old style of politics, in which the narrow interests of the rich and powerful trump those of the wider social good, is especially notable in the conversations between environmental activists (Heimans & Timms, 2014). Activists have every reason to feel despondent about the corruption of politics in Australia by sectional interests in a political economy where the energy and mining lobbies wield substantial power—to the point that insiders self-identify as the "greenhouse mafia" for their ability to influence climate policy (Crowley, 2013). The variety of economic transition required to move beyond fossil fuels is thought to require fundamental social transformation, which goes far beyond the impacts of a single mining site. The Adani controversy is reified as a symbol of everything wrong with how the country is governed. The controversy can be conceptualized as a chasm within a wider fracturing of the neoliberal, colonial order that privileges transnational capital ahead of a) local, regional, national, and global societal interests and b) a (re)imagining of a more sustainable political-ecological order.

The thesis has described the activist coalition that has formed to contest the Adani controversy by using spatial and scalar representations as both implicit and explicit political strategies. The coalitions—anti-mine *and* pro-mine—both seek to shape the spatial contours of a shared world. The pro-mine coalition's is oriented towards a short-horizon temporality, in which its power in the *status quo* must be reproduced into the future and guarded against contingent threats that might destabilize existing political-ecological orders; however, the pro-mine coalition remains situated within the framework of "business as usual" in which the further exploration of natural resources, e.g., coal, is seen as necessary for economic development/growth. The anti-mine coalition is oriented towards a distant-future horizon in which the Adani controversy represents an opportunity to produce new ways of organising the economic, political, and social structures that mediate our relationship with

the natural world. The anti-mine coalition is positioned to view a future within which scalar relations are flattened, thereby allowing more distributed social relations to emerge. The integration of scale and discourse in this thesis provides pointers for those examining the politics of similar situations around the world.

The Adani controversy illustrates how scalar politics open up opportunities for discussions between coalitions: anti-mining and pro-mining. The Adani case-study illustrates the possibility to employ scale frames to not only expose and challenge not only the mining industry, but also the capitalist system in addition to the traditional style of politics upon which resource extraction depends; in other words, the findings from this thesis highlight how different framings of the same issue can be a benefit, rather than a detriment to socio-ecological movements, such as #StopAdani. The ideal of justice that is underscored in this discursive framework allows eco-activists to position the mine as an object of contestation or a site of struggle. The discourse of environmental justice has been integral to the framing of the Carmichael as an imminent threat to the fundamental principles of equality/fairness, which are manifested in environmental well-being and human rights. The Adani controversy is an exemplar of socio-ecological movements in the 21st century that acknowledge the fact that environmental degradation and social inequality are interconnected, interdependent, and interrelated.

Australian environmental activism is defined by an emphasis on environmental/social justice issues, a defining characteristic of the discourse of environmental justice, which is illustrated by the grassroots movement to Stop Adani. The green discourse of environmental justice has been and still is the primary language adopted by activists involved in the climate/environmental movement in Australia (Baer, 2010). Environmental justice in the Australian context—as in most other contexts—denotes a sense of equality, fairness, and justice; in other words, environmental justice is centered around the idea that relationships among human beings and/or relations between humans and nature have been transgressed in one way or another (Dryzek, 2005). Friends of the Earth Australia—a source of inspiration for those protesting the mine— is an example of a grassroots

environmental network that has adopted the discourse of environmental justice. FOE Australia is a socio-ecological movement that "challenges the current model of economic neoliberal globalization and promotes solutions that will help to create environmentally sustainable and socially just societies" (FOE, 2017). Australian environmental activism is a movement that points to environmental injustices in an attempt to give voices to communities who do not participate in decisions about *if*, *when*, and *how* development projects arise.

Stop Adani is a socio-ecological movement that is characterized by its objective to establish a more environmentally sustainable, socially equitable society. A word frequency analysis on the keywords/phrases from several primary sources, such as interviews with activists and social media posts, demonstrates that the discourse guiding the conversation on the mine is environmental justice. The discourse of environmental justice is based on the assumption that an injustice exists where developments and/or disasters create environments that induce costs for local residents, regions, and/or workers, such as the spread of toxic wastes, the pollution of air/water/soil, and the ecological damage of landscapes and water systems. Activists who align themselves with the movement to prevent the coal mine and the rail system from being built by invoking the aforementioned assumption inherently subscribe to the ideals of environmental justice. A shift from *green radicalism* to *environmental justice* is parallel to a shift from a locally-focused issue of ecological degradation to a globally-focused issue of environmental/social injustice—a shift that was inspired by the dramatic event of the 2019-2020 Australian bushfire crisis. The change in the conversation also denotes a paradigm shift in which the mine is viewed as symbolic of not only the threats of anthropogenic climate change to the natural environment of the Galilee, but also the impacts of natural resource exploration on the social/political status of Australia. Stop Adani is an environmental, political, and social movement that is positioned to simultaneously address both the legality and the morality of the opening up of the Galilee.

The landscape of Australian environmental activism is predicated on the existence of social media platforms, such as Facebook, Instagram, and Twitter, which allow for increased connectivity in times of natural disasters such as bushfires/wildfires. Twitter has been integral to the progression of

Stop Adani from a grassroots movement to a global cause because of its ability to present information at multiple scales—spatial and temporal. #StopAdani is the hashtag on which the conversation among activists and the exchange between activists and nonactivists is based. The use of the hashtag has been amplified by recent events, such as the bushfire crisis, in terms of 1) the primary green discourse adopted by environmental activists shifting from the less comprehensive *green radicalism* to the more comprehensive *environmental justice* and 2) the number of tweets using #StopAdani in the early stages of the bushfire crisis and the number of tweets using #StopAdani during the climax of the bushfire crisis. Twitter has been the medium through which the movement has been able to send its message more broadly in terms of a) the number of tweets using the hashtag #StopAdani, b) the geographic locations of the users posting the tweets, and c) the scope of the keywords/phrases noted in the tweets. Also, Twitter has been able to provide a channel for activists to connect with other activists during dramatic events, such as the bushfires/wildfires that completely devastated the country. The landscape of Australian environmental activism has has become increasingly connected—connected in terms of the relationships between environmental activists who participate in the movement *and* connected in terms of the parallels between the impacts of the mine specifically and the implications of climate change in general—most notably through the use of social media, e.g., Twitter in response to dramatic events such as the bushfire crisis.

Future Research

The thesis contextualizes the mine controversy with an overview of extractivism in Australia and a case study of the Carmichael in the Galilee. The work discusses the scalar politics and environmental discourses adopted by environmental activists The data analysis presented in this study is limited to discussions through January 2020, although it is important to note that the controversy is ongoing. The sources of information for this thesis, including the social media posts, are also limited because social media in and of itself is not necessarily representative of the community of environmental activists; in other words, the online discussions among eco-activists represent the emotions, feelings, sentiments, etc. of those who are willing to share their opinions in a virtual format. Also, discourses are not comprised of just words or dominant phrases; the key words/phrases simply provide a proxy

for seeing what kinds of relations are being invoked and what kinds of connections between those relations emerge. The web-based data from Twitter has both pluses and minuses as far as this study is concerned: the data collected over the period of a few weeks is a significant amount of information that provides insight into the way the Carmichael is being constructed as a site of struggle, while the social media posts are limited in their capacity to fully capture the essence of the debate—the *milieu* of the long-established, highly contextual argument that extends way beyond the question of economic development vs. environmental conservation. The analysis of the mine controversy is thereby limited here to the examination of images, video, text, etc. from social media posts using the hashtag #StopAdani.

#StopAdani campaign in this thesis was examined through an analysis of the grey literature, interviews, and by applying an environmental discourse analysis to social media-based discussions. The method(s) of topic classification, word frequency, etc. are applicable to any and every campaign that has taken to social media platforms, such as Facebook, Instagram, and Twitter; for example, the environmental discourses presented in this thesis on a coal mine in Australia are parallel to the environmental discourses adopted by the next generation of activists inspired by leaders such as Greta Thunberg—thus future research could draw on this multi-scalar approach. Future research could extend this work by continuously streaming Tweets to gather more data on the discourses adopted by eco-activists, employing ArcGIS might to create a geospatial representation of discussions between activists on the global stage, and consulting NGOs beyond ACF to converge on a fuller understanding of the evolution of activist politics in this case. The methods presented in this research are but a starting point to explore the geography of environmental activism in modern-day society.

The next steps in the investigation of environmental activism in Australia include a continuous stream of the tweets using the hashtag #StopAdani, an in-depth analysis of the data collected from Twitter, and a survey of other social media platforms, such as Instagram, Facebook, etc. that were not considered in this study. The Adani mine is a complex, complicated case study on the dynamic, ever-changing landscape of environmental activism not only in the context of coal mining/natural

resource extraction, but also in the context of global climate change. The Carmichael is still being debated by state/federal governments, financial institutions, and local communities in terms of the ecological *and* economic viability of prolonging the dependency on fossil fuels. The Adani mine will continue to be a subject of discussion—online and in-person—that transcends the geographic location of the mine itself. The continued study of the mine and its tangential projects is necessary in order to gain a deeper understanding of the environmental/social movements of the 21st century.

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