

Ecodramaturgies: theatre, performance and climate change

Book

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Introduction

As I write this, climate change has finally become the centre of media attention to an almost unprecedented degreeⁱ. In London, Extinction Rebellion activists have blocked off five busy sites, which include Oxford Circus and Waterloo Bridge, over a week in an act of nonviolent civil disobedience in April 2019. They have three simple demands: they want the government to ‘tell the truth’ about the climate emergency; they want emissions cut to net zero by 2025; and they want a citizen assembly to inform climate-related decisions (Extinction Rebellion n.d.). That same week, David Attenborough's documentary *Climate Change – The Facts* (2019) has aired on the BBC and internationally. The destructive and fatal reality of climate change is unequivocally presented by one of most authoritative voices on nature in the UK. During this time, young climate activist and founder of the school strike movement Greta Thunberg has delivered a speech to European Union leaders holding back tears: ‘I want you to act as if the house was on fire...We are in the midst of the sixth mass extinction’ (quoted in Rankin 2019). Here, climate change has finally been placed front and centre in the media, having pushed Brexit out of the UK headlines for at least a week. Perhaps a critical mass has been reached. There is no longer debate on whether anthropogenic climate change is happening and at what rate, rather what the effects would be, emissions reduction targets and what other action is necessary. The whiteness of these voices have joined Inuit voices, African voices, Central American voices, countries like the Maldives, Bangladesh and the Marshall Islands, and other Indigenousⁱⁱ voices who have all been saying for years that urgent action is required as they are already experiencing the life-altering and at times deadly effects of global climate change. This is the ecological (and social, political) context in which this book has been written.

The urgency of climate change and its associated effects have created an ecological imperative for all fields to address. As theatre scholar Wendy Arons asserts: ‘humanity’s relationship to the environment is an issue of urgent concern, and one that can and should be addressed by anyone engaged in critical and intellectual pursuits, including theatre artists and scholars’ (2007: 93). Theatre and performance can offer something *distinctive* in their engagement with ecology. They can upend reductive narratives and images, embodying and performing contradictions, erasures and imaginative possibilities. Like theatre scholar Carl Lavery (2018), I am skeptical of hyperbolic claims of what theatre can do, particularly in relation to behaviour change. The problem-solution model, drawn on when theatre is utilised to ‘communicate’ specific ecological problems and ‘solutions’, often instrumentalises performance in a reductive way and largely focuses on content. This approach does not always leave room for the nuance, complexity or intermeshment of contemporary ecological issues. Rather, my argument that theatre and performance can offer new frames of thinking, feeling and viewing, or tell/show us something about our current ecological situation, follows theorisations on the social impact of theatre and performance in relation to ecology from such thinkers as Heddon and Mackey (2012), Arons and May (2012, 2013), Kershaw (2007) and Allen and Preece (2015). As Deirdre Heddon and Sally Mackey suggest ‘it is the combination of artistry and reality, of aesthetics and world, that has the potential to produce affect’ (2012: 176). Theatre and performance have the potential to engage ecological thinking in unique ways to other mediums, speaking to our current context. This is the animating principle of my theorisation of ecodramaturgies.

Our current global ecological circumstances could be characterised as a crisis, catastrophe (Morton 2010) or emergency (Emmott 2013). The United Nations Intergovernmental Panel on Climate Change has identified a tipping point of 1.5 degrees Celsius (above pre-industrial levels) as the level at which the impacts of climate change would be irreversible and devastating (Masson-Delmotte et al. 2018), which is likely to happen within 12 years. However, climate change is an immediate threat, it is already producing unequal and fatal effects for many. As Mike Hulme argues, ‘climate change is not “a problem” waiting for “a solution”. It is an environmental, cultural and political phenomenon that is reshaping the way we think about ourselves, about our societies and about humanity’s place on Earth’ (2010: 41). Climate change is just one aspect of ecology; however, it is the grand narrative of our current ecological context. Climate change is ecological in that it requires an urgent and radical reconsideration of the relationship between humans and the earth, how we live and how we shape, and are shaped by, the more-than-human worldⁱⁱⁱ. This requires a close examination of how climate change intensifies inequalities and injustices, falling along familiar patterns of vulnerability and marginalisation: race, gender, class, disability, social mobility, political capital and colonisation. This book asks questions about how theatre and performance embody, reveal and intervene in these inequalities in a climate-changed world.

To understand the approach I have taken in this book, it is important that the ‘I’ (and my knowledge) is situated. I am a white, Canadian (with Belgian, Ukrainian, Polish and British heritage) cisgendered woman who currently resides in the United Kingdom and holds a permanent academic post at a university in an urban centre. As such the critique of dominant western world views, underpinned by colonialism, in this book is also self-reflexive. My

experiences have shaped my political thinking, which informs this book, as I strive for social values of justice, rooted in intersectional feminist, anti-racist, decolonial, queer, disabled and non-anthropocentric ways of thinking. This is ongoing work that I do not always get right. My aim is not to speak for any group of people, rather I want to think critically about some of the underlying ethnocentric assumptions made about ecology, with an understanding of how this might develop what Joni Adamson refers to as ‘a more inclusive environmentalism and a more multicultural ecocriticism’ (2001: xix) by revealing different stories and dramaturgies.

My interest in this area stems from a formative experience learning about global warming and a long-nurtured love of live theatre and performance. As an 11-year-old, I remember learning about global warming being caused by greenhouse gases, and at the time in 1995, CFCs (chlorofluorocarbons) were identified as a prime culprit. I do not recall the details of the context of learning this information, but I do remember an infographic that illustrated how greenhouse gases trapped in the atmosphere causes temperatures to rise. The hole in the ozone seemed like an immediate threat in the cultural imaginary of North America (the angel in Tony Kushner’s 1991 *Angels in America* enters earth through a hole in the ozone), while global bans of ozone depleting chemicals were passed. I was struck by the deep injustice of global warming then as it imprinted on my young mind a specific view of the future: chemicals were trapped in the atmosphere and were destroying it. 1995 was also the 25th anniversary of Earth Day and there was a certain cultural capital associated with (mostly white) environmentalism. My interest in ecological issues continued as I became involved in activist organisations and efforts during my undergraduate degree.

My environmental consciousness-raising happened separately, but in parallel to, my excitement at live theatre. I was born on traditional Anishinabewaki territory in what is now known as Cambridge, a small city in Ontario, Canada. Growing up I was privileged to be taken to see theatre regularly as a child, including community theatre and annual trips to see musicals in Toronto or plays at the Stratford Festival in Ontario. The thrill of live performance was established in me from a young age. I also had the chance to perform in summer camp productions (including delighting in a large costume closet), and then study drama in high school, where I developed my theatre-making, writing and directing my own plays and taking them to local theatre festivals. My ecological interest and my interest in theatre and performance remained separate until I wrote and directed a play about a group of young people facing an uncertain ecological future for my undergraduate honours project at the University of Guelph, finally bringing the two together. This stemmed from a rather naive belief in the social and political power of theatre and performance after studying protest and political theatre practices. Although my thinking has become more nuanced and complex since that point, after writing my MA dissertation and PhD on the subject, I am still committed to the idea that theatre and performance can speak to critical socio-political and ecological contexts and issues in imaginative ways, particularly in light of climate and environmental inequalities and injustices. In performances, I have been moved, angered, bored, scared and delighted; I have felt connected and isolated; I have rethought my perspective and discovered new things about the way the world works. It is from this position that I approach *Ecodramaturgies: Theatre, Performance and Climate Change*.

The differentiated violence of climate change is difficult to conceptualise for those who are not experiencing it directly. Rob Nixon, in his book *Slow Violence and the Environmentalism of the Poor* (2011) describes climate change and other ecological slow-moving crises as ‘long dyings’ (2). This is the kind of violence that is often unseen or misunderstood because it happens gradually over a long period of time, ‘a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all’ (2). Nixon argues that this slow violence has consequences across geographies, race, gender and economic mobility, as ‘it is those people lacking resources who are the principal casualties of slow violence’ (4). Although slow moving and cumulative, it is violence nonetheless, often against marginalised peoples, species, places, and non-humans. Climate change needs to be understood as violence in order to understand its effects. Although it is slow moving, it is happening now and many people are suffering at times fatal effects of droughts, floods, fire, hurricanes, depleted soil, loss of biodiversity and polluted air. It is not a White, Western and ‘full-stomach phenomenon’ (Nash 1982) as people of colour in the Global South (and other places) are experiencing the violence of climate chaos on their living conditions, health, livelihoods and well-being.

Connected to the concerns that animate this book are the representation issues for conceiving and understanding the idea of slow violence of climate change. Nixon perceives this as a representational barrier: ‘how to devise arresting stories, images, and symbols adequate to the pervasive but elusive violence of delayed effects...How can we turn the long emergencies of slow violence into stories dramatic enough to rouse public sentiment and warrant political intervention’ (2011: 3). These key questions are related to the central questions I am asking

about images, narratives, values, themes, processes, ethics and experiences of ecodramaturgies in representing the complexity of ecological relationships across different people, places and more-than-humans. Stories of climate change are often anonymous and happen over timescales that are not compatible with our understanding of temporalities or our human-centric narrative preferences or the political cycle or the media cycle. These images, narratives and stories also need to foreground the way the slow violence of ecological destruction magnifies differences, oppressions and vulnerability and the power structures that underpin them. A lot about the world has changed since I learned about global warming as an 11-year-old, but theatre and performance has continued to find ways of engaging and interrogating the current complex reality. I hope this book contributes to the rich history of understanding the interaction between theatre and the world.

In increasingly polarised political climates (in which climate change is remarkably still a contested term in some places), I argue that theatre and performance can open up ways of seeing and thinking, reflect blind spots and injustices, nuance ecological ideas and conversations, ask questions and problematise dominant anthropocentric modes of representation. This is based on what I call intersectional ecologies: a way of interpreting ecodramaturgical practices, foregrounding marginalised perspectives and acknowledging the multiple social and political forces that shape climate change and related ecological crises. This is the lens I use to think and write about a broad spectrum of ecologically-oriented performance practices, largely from the UK, US, Canada, Europe, Africa and Mexico from predominantly 2007-onwards. The focus on the contemporary allows for exploration of timely ecological questions, including persistent issues such as environmental justice, urbanisation, reductive images associated with

whitewashing climate change and the way in which race, class, gender and colonialism produce ecological contexts and effects. Intersectional ecologies considers overlapping injustices, exclusions and oppressions asking who is affected and marginalised, and whose voice or perspective is being heard and whose is being erased. This book builds upon and expands the work of other scholars who have contributed to the burgeoning discourse of performance and ecology, extending it through the practice and critical tool of ecodramaturgy. My aim is to broaden this discourse through a variety of performance forms, including site-based, participatory, immersive, installation, activism, film, live art and text-based plays, read from an intersectional ecological perspective.

The current ecological crisis, and my own context within it, is one of the reasons I took up this research. Although I consider myself an ‘ecologically conscious’ person, I am often conflicted, unsure and confused about what to think, how to feel, how to move forward and how to take action. Heddon and Mackey identify uncertainty and precarity as key states when engaging in research about environmentalism and performance. They write: ‘that science is so visibly unable to offer a definitive solution to climate change prompts a new and potentially productive sensibility, the acceptance of uncertainty: of epistemology, of actions, of results, of futures’ (2012: 169). They link this uncertain state to the uncertain nature of performance, particularly how multiple actants of performance (such as audiences) might respond and experience a performance. Heddon and Mackey suggest that this uncertainty (about ‘solutions’, the future, and the best way to address the ecological crisis) may be productive and well placed in performance. Robert Butler, in his 2008 blog post on Ashdenizen, argued that one of the reasons theatre was (then) reluctant to engage with climate change was because theatre and

performance-makers were unsure of what to think about it. Providing a productive edge to uncertainty, Butler wrote ‘but not knowing what you think about something is the perfect moment to engage with it’ (2008). It is from this position that I approached this project. Rather than eschew this complexity and uncertainty, I was motivated to take up this research because of it. The urgency of the global climate emergency will not be helped by reductive simplifications; complexity (and perhaps confusion and conflict) can be embraced as generative concepts in imagining how we live within it.

I am inspired by Linda Tuhiwai Smith’s thinking on decolonising methodologies, mindful of how ‘research’ and ‘scholarship’ can be used (and have historically been used) to further the ideological supremacy of the ‘West’, often setting up the Other as anyone not a White, western man. After Edward Said, Tuhiwai Smith argues that the idea of the Other is constructed through western scholarship, institutions, vocabulary and ideological discourses often underpinned by colonialism. ‘Both the formal scholarly pursuits of knowledge and the informal, imaginative, anecdotal construction of the Other are intertwined with each other and with the activity of research’ (Tuhiwai Smith 1999: 2). In this book, I aim to avoid the colonising legacy of research which also constructs the more-than-human as Other, in addition to women, people of colour, Indigenous peoples, people with disabilities and many more. I position research as Tuhiwai Smith does, ‘as a significant site of struggle between the interests and ways of knowing of the West and the interests and ways of resisting the Other’ (Tuhiwai Smith 1999: 2), extending the Other to include more-than-human actants. This book aims to highlight forgotten, erased or marginalised experiences and narratives by some of those most affected by ecological crisis.

Conceptual background

Before discussing where this project sits within the conceptual field of performance and ecology, it is useful to clarify some of the terms used. ‘Ecology’ describes the interconnected relationships of the living world, ‘the study of animals and plants, our habitat and environment, as well as the analysis of the interrelationships between us all’ (Giannachi and Stewart 2005: 20). The term refers not to the biological scientific study of organisms in the environment but the way in which we as human beings relate to each other, our environment, and the more-than-human world. ‘Ecology speaks to both complex webs of relations between the human and non-human – themselves ideological, racialized and problematic conceptual markers – and the simultaneously fraught and comforting notion of “home”, the *oikos*’ (Di Battista, Haas and Patrick 2015: 3). I discuss home and *oikos* in detail in Chapter 4. Ecology, in this sense, focuses on the experience of ecological relationships in our everyday lives, in lieu of ecological science. “Ecology” is of course a labile term, and an inherently western notion: in its very usage there is an entrenched exclusivity, which favours certain world-views over others. It is also a word that is currently enjoying much popular (mis)use in an array of different contexts’ (Allen and Preece 2015: 5). As Allen and Preece articulate, the idea of ecology is contingent and situated with western culture, to the detriment perhaps of other cultural ideas and worldviews.

Taking ecology out of the field of biological sciences and bringing it into a discourse of art and performance implies a different kind of knowledge and engagement. A creative and

imaginative involvement with ecology can open it up, creating different modes of engagement, which in turn could give rise to new ways of thinking and making performance ecologically. For Morton, ecological thought ‘isn’t just to do with the sciences of ecology. Ecological thinking is to do with art, philosophy, literature, music, and culture’ as ‘ecology includes all the ways we imagine how we live together. Ecology is profoundly about coexistence’ (2010: 4). Art, philosophy and performance can reveal, question and imagine ‘how we live together’ in differentiated and unequal ways. Although all art can be considered ecological in its material form, ‘ecological art, and the ecological-ness of all art, isn’t just *about* something (trees, mountains, animals, pollution, and so forth). Ecological art *is* something, or maybe it *does* something’ (11). The theatre and performance practices discussed here ‘do something’: reveal, disclose, critique, problematise and extend thinking of ecological relationships in one way or another. I have approached the intersection of performance and ecology from this position of ecological thinking, which includes thinking about everyday relationships with the more-than-human, and how they are shaped by global capitalism, colonialism, ideology, race, class, gender, access and environmental injustice. Rather than collapse differences in an easy mantra about connectedness, my version of ecological thinking focuses on the ways in which these connections, and the effects of these connections, are violently unequal and disproportionate. Ecological thinking is implicit throughout my analysis, as I theorise the way in which ecodramaturgies are interconnected with the material world, and the way in which these asymmetrical interconnections are opened up in and through performance.

Like ecology, the dominant understanding of dramaturgy in ‘western theatre’ is entrenched in a Eurocentric frame: ‘Within a Eurocentric paradigm, understandings of

dramaturgy can be traced to secularization of the form in the sixteenth century and reflect the critical examination of a play's structure and organization as well as input into the development of the process of the play' (Joseph 2019: 131). In response to this representational paradigm, a decolonising dramaturgy, for Ric Knowles, is one 'in which performances are structured through and grounded in embodied understandings of worldviews that are deeply encoded in culturally specific cultural texts, performances, and practices' (2015: 37). Dramaturgy has now expanded into diverse directions, speaking to forms beyond the single-authored text-based theatre which have opened it up:

Post-dramatic theatre and live art practices encourage us to broaden our understanding of dramaturgy beyond conceptions of the "drama" and synthesis of meaning, to encompass processual and open-ended structures, admitting the aleatory, entropic and chaotic, examining the potential for multiple narratives, frames and forms of textuality. (Turner 2010: 150)

I think about dramaturgy as a holistic approach to the way theatre and performance make meaning, which can be through analysis of play texts, but also through other elements of performance as Turner suggests: 'dramaturgy is as likely to be concerned with the use of space, visual elements, sound, audience proxemics and other aspects that might be less directly addressed by play texts' (Turner 2015: 3). My focus is on how all of these meaning-making elements relate to ecology; the integration of some of the more formal qualities with the social context of the work. Dramaturgy is expanded in this way to consider how ecological thinking is enacted, embodied and performed through ways of viewing, making and experiencing performances.

Theatre scholar Theresa J. May coined the term ecodramaturgy, describing it as ‘theatre and performance making that puts ecological reciprocity and community at the center of its theatrical and thematic intent’ (in Arons and May 2012: 4). May’s foundational work applies the term predominantly to play texts and intent, attending to the injustices of ecological crisis. I extend it to an analysis of performance more broadly, thinking about meaning-making strategies, in a variety of performance forms, in relation to ecology. My theorisation of ecodramaturgies considers performance forms, themes, processes, narratives, values, politics, ethics and experiences. For Eckersall, Monaghan and Beddie ‘to think of dramaturgy in terms of ecology foregrounds the crucial importance of connectivity, of relationships between people, objects, natural forces and their interaction in the human/natural environment’ (2014: 20). I argue that ecodramaturgies can subvert dominant forms of representation that often reduce and devalue the more-than-human world and ecological effects on people. This echoes Arden Thomas’ thinking: ‘by stirring the collective imagination towards a deeper sense of our material embeddedness in and accountability for the ecomaterial world, ecodramaturgical practices are poised to shift the paradigms of human-nature relations and to change audience perceptions of themselves. With its insistent emphasis on embodied connectivity, performance practices are crucial sites of investigation into the networks of exchange between culture, the environment and animals’ (Thomas 2016: 201). Ecodramaturgies are often activist or gestures of resistance through diverse practices, forms and responses. They are inherently political in their responsiveness to socio-political contexts.

Ecodramaturgies are a way of understanding how theatre and performance practices make ecological meaning and interact with the material more-than-human world, attendant to the

different experiences, complexities and injustices that entails. This book considers how different dramaturgies are concerned with ecology, putting forward various ways of thinking about ecodramaturgies. Thinking ecologically requires a shift in perspective to de-centre the human, question neoliberal environmental logic and re-imagine the nature/culture binary. In theorising the potential and possibilities of ecodramaturgies, this book aims to address the following questions: What dramaturgical strategies offer new ways of thinking about material encounters with the world, critique anthropocentric neoliberal binaries or make meaningful marginalised forms of ecological knowledge and worldviews? How can theatre and performance reveal the way different bodies (human and non-human) are exposed through environmental injustice and unequal climate change effects? How can theatre and performance, potentially through erasure or omission of places or people, throw into relief the multiple and intersecting forms of oppression and marginalisation connected to ecology? How can an intersectional analysis open up new ways of thinking about ecological performance? I think through these questions in subsequent chapters in order to establish a set of examples for the potentialities of ecodramaturgies.

This theorisation and articulation of ecodramaturgies resists totalisation. Rather, it focuses on complexity, entanglement, tensions, contradictions and uneasily reconcilable ways of being and thinking. They are not intended to be descriptive; they are simply an attempt to advocate for diverse strategies across multiple forms. An ecodramaturgical analysis considers modes of viewing and making, narratives, values, politics, ethics and affect in process, production and reception.

The theatre and performance works included in this book are performance events,

practices and plays that engage with ecology, *thematically*, *experientially* and/or *performatively*. In the broadest terms these works prompt the audience (or participants) to consider ecological relationships through the content, form and/or the experience of the performance, as well as the way in which the performance enacts ecological thinking. This encompasses different forms including dance, live art, music, installation art, film, theatrical performance, eco-activism and text-based performance. In my development of ecodramaturgies, I am interested in questions of site, text, spectatorship, representation, cultural context, form, participation, scenography and space (Bottoms 2003) from an intersectional ecological point of view.

Semantically, I do not make a distinction between theatre and performance per se, opting for an expanded idea of theatre. Instead of being associated with the ‘pre-scripted blackbox’, or ‘linguistic artefact’, I note Lavery’s emphasis on the performative:

in contemporary practice and theory, theatre is seen as a predominantly performative medium, that is to say, as something embodied, ephemeral and affective, with the result that the fundamental concern of scholars is no longer to decipher what the theatre text means but rather to focus on what the theatre medium ‘does’; in how, that is, its dramaturgical distribution of organic and inorganic bodies in actual time and space creates sensations and experiences in the here and now. (2016: 230)

I theorise all of the works in this book as ‘doing something’ in relation to ecological thinking, including revealing ecological relationships, critiquing specific practices or our relationship to the more-than-human world, and/or deconstructing binaries between human/nonhuman, nature/culture. These works extend, problematise and/or offer a new way of thinking to my

theorisation. They are often urban, resisting the anti-urban bias in much ecological work (Harvey 1993) and challenging the commonly held perception of ecology as ‘green and pleasant’. The body of work I include also addresses a gap in scholarship around the spectrum and diversity of ecologically-oriented theatre and performance work. However, they are not an exhaustive and complete index of all ecological theatre and performance. The broad spectrum of work is suggestive of the possibilities of ecodramaturgies, indicative of the diverse forms of practices that this term might encompass.

Ecological Waves

Broadly, performance and ecology bring ecological thinking to bear on theatre and performance criticism, dramaturgy, production, and scholarship. The field, or emergent area of study, as asserted by eco-performance philosopher Wallace Heim, is multivocal and not categorically recognisable, rather ‘a family with resemblances, always changing, with its borders hazy and continually porous to other kinds of art-making and other sources of knowledge and experience’ (Heim 2014: 6). I think through the historical background of the field, loosely connecting the ‘family resemblances’ into three waves. It is important to note the ‘waves’ of scholarship in performance and ecology detailed here are mainly Anglo-centric, English-speaking western, emanating primarily from the North American, UK, Australian and New Zealand academic contexts, which means it is a restricted and limited view of the ecology and the broad range of theatre and performances practices that engage with it. The wave analogy is useful but imperfect as it does not necessarily take into account that theoretical strands develop in complex and tangled ways and do not fit neatly into a bounded timeframe. Yet, waves are

helpful as they leave behind traces, which might get picked up by a further wave. The constant movement and circulation allow for ideas to merge and interact in generative ways. Not all work in this area can be neatly categorised into three distinct phases; rather, ideas are circulating, with the boundaries between the waves being usefully liminal. Noting the limitations, the three ‘waves’ of this work is a helpful analogy for the historicisation and conceptual background of this book.

Performance and ecology as a topic of study has been developing in earnest since the mid-1990s. Since that time a lot about our ecological situation has changed. In 1994, global warming was seen as a relatively serious threat, as the United Nations Framework Convention on Climate Change was agreed in Rio de Janeiro; however, it was still considered distant and slow moving so drastic action was not widely taken. The first wave of performance and ecology work initiated around this time with the special issue of *Theater* is characterised by articulating the need of such a discourse, as well as evoking ecocriticism tropes, particularly romanticism and wilderness ideals and the metaphorical use of ecology. The first wave also provided some early theorisations of the role community-based performance might play in engaging with ecological concepts and concerns.

This first wave of scholarship is prefigured by political and social theatre practices (with North American and UK groups having well documented histories). Activist groups, political theatre companies and performance artists employed eco-performance practices in response to ecological concerns and the growing environmental movement of the 1960s and early 1970s. Activist groups such as Greenpeace and Earth First! used performance strategies to gain media

attention and further their causes. The emblematic Bread and Puppet, a US based political theatre company known for creating circus style performances with large-scale puppets in a farm in Vermont, also engaged with ecological issues. For example, their mid-1990s work opposing the community gardens of NYC being removed for ‘development’ under then-Mayor Giuliani, included puppets of the gardens and the often-used Mother Earth character (Bell 1998: 272). In the UK, there were counter-culture radical theatre groups also making work about ecological issues of the day, such as the Campaign for Nuclear Disarmament, oil drilling, and displacement and land rights. Many of these alternative companies were community-orientated and aimed to make work that would affect local change (Kershaw 1992: 5). Other theatre and performance companies in the US and South Pacific in the 1980s and ‘90s engaged with ecological activism, as community-based performance or children’s performance including Precipice Theatre, The Wan Smolbag Theatre, Evergreen Theatre Society and Theatre in the Wild. The political theatre roots of ecological performance used strategies such as reframing sites, resistance, spectacle, audience participation and community engagement to enact ecological thinking in different ways. These strategies are utilised by some of the contemporary theatre and performance works that I focus on in this book.

John McGrath’s *The Cheviot, the Stag and the Black, Black Oil* (1973) is an example of the way in which radical performance engaged with ecological issues of the time. Made by 7:84 (Scotland) performance group, the play tells the continuing story of Highland history marked by exploitation: first the nineteenth century forced migration of rural Highlanders to claim the land for Cheviot sheep farming by aristocratic landowners, then the wealthy estate owners using the land for stag-hunting and finally the development of the North Sea oil fields. The performance

toured 27 community venues in the Highlands of Scotland in 1973. The show was a ceilidh play, full of songs, storytelling, jokes and dancing and ‘aimed to illuminate the situation, and to recommend radical action for the future’ (Kershaw 1992: 152). The play tied together capitalist exploitation, class oppression and ecological issues. The popularity of the play, which told an alternative history and questioned the future of Scotland, was emblematic of the kind of community-orientated and socio-political-ecological performance that was being made at the time. These early activist performances built an activist basis for ecological performance in the Anglo-west that continues today. The lineage of these ecological theatre and performance works that have been able to galvanise communities around ecological issues, and were attendant to some of the intersectional concerns of class, gender, neoliberal capitalism and urbanisation still ongoing today.

Early thinking in performance and ecology scholarship developed from ecocriticism in literature. Cheryll Glotfelty describes ecocriticism as ‘the study of the relationship between literature and the physical environment ... ecocriticism takes an earth-centered approach to literary studies’ (1996: xviii). Performance and ecology could be thought of as taking an earth-centred approach to theatre and performance, viewing performance as part of the larger world which ‘does not float above the material world in some aesthetic ether, but, rather, plays a part in an immensely complex global system, in which energy, matter, *and ideas* interact’ (xix). This thinking is useful in relation to performance and ecology, and in perhaps reconfiguring the binary that relegates theatre and performance to ‘culture’ (as opposed to nature). Theatre and performance do not exist in a vacuum; they impact and are impacted by the world of social-

ecological systems and relationships. Ecodramaturgies speak to this relationship by asking how theatre interacts with the world.

Una Chaudhuri's landmark article, "'There Must Be a Lot of Fish in That Lake': Toward an Ecological Theater' (1994), (in a special issue of *Theater* also featuring articles by Munk, Bell, Fuchs, Barnett, and Rabillard) called for a move towards an ecological theatre^{iv}. Chaudhuri issues an important call to arms, contending that theatre must engage with ecology for its 'own standards of social seriousness and political relevance' and because 'ecological victory will require a transvaluation so profound as to be nearly unimaginable at present. And in this the arts and humanities – including the theatre – must play a role' (25). She identifies the ecological crisis as a crisis of values and the theatre 'as the site of both ecological alienation and potential ecological consciousness' (25). Although I conceptualise ecological thinking differently, as intersectional, relational, entangled, messy, contingent and in flux, this work set up a useful foundation for thinking about how theatre and performance can be thought of through ecological frameworks.

Writing before the new millennium, Chaudhuri further contends that the western theatrical imagination of the last century is 'haunted' by 'the ticking time bombs of ecological disaster' (1994: 23). At this time the most common forms of ecological theatre are ones that include 'an underlying and dystopic ecological condition pervading the world of the play' (23), which have largely remained unexamined (i.e. Beckett's *Endgame* (1957), Ibsen's *An Enemy of the People* (1882), Rivera's *Marisol* (1992) which all enact a negative ecological vision). One of the reasons for this, she argues, is the humanist foundation on which modern drama, namely

naturalism and realism, are built. Naturalism and realism put forward a ‘wholly social account of human life’ (24), seemingly divorcing humans and culture from the natural world. Chaudhuri even goes as far to say that naturalism is ‘anti-nature’, despite the fact that it is teeming with ecological imagery:

Though its thematics kept in touch with nature through images of cherry orchards, wild ducks, and polluted baths, the ideological discourse of realism thrust the nonhuman world into the shadows ...The junk-strewn, garbage-choked stages of Pinter, Mamet, Shepard, and others, reveal naturalism’s anxiety – long concealed – about the widening gap between the human and the nonhuman. (1994: 24)

The first step towards an ecological theatre, according to Chaudhuri, is to acknowledge the rupture between humans and nature that theatre participates in^v. By making space for this acknowledgement, ‘the theatre can become the site of a much-needed ecological consciousness’ (28). Many of the performances I write about in this book reframe or subvert this binary between humans/nature and nature/culture. It is these dualisms, which have ideologically shaped the relationship to the ecological world in the Global North, that performance might reimagine in much more complex ways.

The first wave also included Downing Cless (1996) who disagreed with Chaudhuri’s assertion, contending that the humanist tradition of the theatre does not necessarily have to be in opposition to ecology. Cless (2010, 2012) advocates the role of the director in staging more ecological interpretations of works (such as Shakespeare’s *A Midsummer Night’s Dream*, Beckett’s *Waiting for Godot* and Chekov’s *The Cherry Orchard*) or offering an ecocritical reading of them. Also among some of the first wave writings was Bonnie Marranca’s *Ecologies*

of Theater (1996). Although Marranca sets out an aim to outline a biocentric worldview, she employs ecology broadly as a metaphor for theorising avant-garde, experimental performances. In my thinking, ecology as a metaphor or analogy for any type of system or network tends to bracket off the relationship to political and material reality. Given the urgency of ecological issues, within this book I use the term ecology in the material rather than metaphorical sense.

Erika Munk's 1994, or 'first wave,' plea for theatre and performance to develop rich and rigorous histories and theories of the field 'went largely unheeded until recently, when a smattering of articles and books appeared on the subject... which have helped lay the groundwork for a recognizable, growing discourse, grounded in a variety of methodologies, from theatre historiography to performance studies' (Arons and May 2012: 4). This 'smattering of article and books', roughly between 1999 and 2010, is what I characterise as the second wave of performance and ecology scholarship. The landmark conference 'Between Nature: Explorations on the Edge of Ecology and Performance', held at Lancaster University in the UK in 2000, brought together 200 international participants to explore the connections between culture, ecology and performance. It spawned collaborations and joint projects, including two edited collections^{vi}: *Nature Performed* (Szerszynski, Heim and Waterton 2004) and *Performing Nature* (Giannachi and Stewart 2005), which is one of the first English-language edited collections to specifically explore ecology and the performing arts. The formation of Earth Matters on Stage (EMOS) organisation and symposium at Humboldt State University in California in 2004 created a further wealth of thinking on the subject and more artistic opportunities with an eco-drama playwriting competition. Founded by Theresa J. May and Larry Fried, EMOS is 'a consortium of

artists, educators, activists and scholars who believe that theatre and the performing arts must respond to the environmental crisis...The EMOS symposium fosters dialogue about the intersection of environment, culture, and performance' (Earth Matters on Stage)^{vii}. Heim's establishment of the Ashden Directory, a database of ecologically-engaged productions with news, a timeline, interviews and the Ashdenizen blog, active from 2000–2014, was about 'endorsing the possibilities for performance to change people's perceptions of what it means to be human and interdependent with environments and with nature, with other-than-human' (Heim 2014: 6). The formation of these three organisations and resources, laid the foundation for the more diverse and multivocal work that would come out of the third wave.

In her influential article, 'Greening the Theater: Taking Ecocriticism from Page to Stage' (2005), May highlights the need to have an intersectional approach to environmental issues (although 'intersectionality' as a term was not yet in popular usage), calling for ecocriticism to be pushed beyond the white, male wilderness aesthetic to consider how environmental degradation disproportionately affects the poor and communities of colour. 'When the ecocritical view can expand its scope to include the issues of race, class, gender, geographic situated-ness, and white power and privilege, then theatre—which has always been a force for activism as well as the dissemination of hegemonic myths—appears ripe for analysis' (2005: 87). She goes on to analyse the way American theatre perpetuated the narrative of frontierism at the turn of the century and participated in the subjugation of Indigenous peoples, while also objectifying the landscape. It is from this spirit that I base my analysis, recognising that ecological thinking means unpacking issues of privilege, white supremacy, class, gender, sexuality and Indigeneity.

These animating ideas run through this book, although I discuss them in further detail in Chapter 1, with intersectional ecologies, and Chapter 5, where Indigenous ecodramaturgies are the focus.

Despite the works and events mentioned above, the second wave was still largely characterised by a relative absence of scholarship and research that took performance and ecology seriously, perhaps as ideas were gestating. This echoes Wendy Arons' argument that theatre and performance scholars, for the most part, have been slow to engage with ecology (2007). This lack of engagement may be due to the culturally inherited separation between nature and culture 'that keeps theatre scholars trapped in binary ways of thinking about what performance is and does' (93). She further suggests it could be due to the field of study seeming somehow uncritical or less sophisticated than other topics of interest to theatre and performance studies: 'the presumption that the intersection of ecological concerns and theatre produces the kind of amateur, sincere, heartfelt, preaching-to-the-converted production' (93). These are not necessarily the kinds of theatre and performance practices I discuss in this book, although I think they are worthy of study in their own right and want to resist any high/low art binaries that this implies. Ecology and climate change are no longer 'fringe' issues, but ones that are already affecting the everyday lives of billions of people, animals and plant species. These concerns are becoming increasingly urgent and apply to everyone, in every discipline, and should be engaged with through a range of different modes and practices.

The third wave of performance and ecology is characterised by a more rhizomatic structure, with diffuse and diverse areas of study developing simultaneously, inflected and inspired by contemporary social and political issues. Between 2010 and the beginning of 2020,

there have been no less than 24 edited collections, books and special issues of journals in English on topics related to performance and ecology, demonstrating the growth of the field^{viii}. These works set out a renewed critical agenda for the third wave. As Arons and May contend: ‘what was a fringe conversation in theatre studies only 15 years ago has burgeoned into a complex, nuanced, diverse, and multivoiced praxis’ (2012: 9). Some of these directions of growth have included outdoor Shakespeare and ecomaterialism (O’Malley 2018), the ecological image (Lavery 2019), children and intergenerational performance (Hopfinger 2018), site-specific river performances with communities (Matthewman et al. 2015, Scott-Bottoms 2019), ecoscenography (Beer 2017, Hann 2020) and the ongoing effects of the BP oil spill in the Gulf of Mexico (Ryan 2019) to name only a recent few. In my characterisation of the relationship between performance and ecology, I aim for these attributes of complexity, nuance and a diverse, intersectional praxis.

This third wave has also seen a proliferation of climate change dramas^{ix} that have been staged in London since 2009. While there have been a number of these plays^x, indicating the increased visibility of the ecological themes and topics in theatre, they are not the focus of my analysis. Arons and May acknowledge the difficulty in playwrights trying to dramatise stories about climate change, the scale of which is so vast and potentially beyond human forms of measurement and comprehension, that ‘even when a playwright strives to foreground ecological issues on stage, the stories are hard to contain’ (2012: 4). Instead of placing the onus on the playwrights, within this book I am interested in how theatre and performance enact or reveal ecological relationships, through an ecodramaturgical analysis of practice. Heddon and Mackey write about the failure of these climate change plays to engage audiences in environmental thinking ‘with audiences remaining unengaged and unaffected by environmental themes. Where

the balance is tilted towards the emotional narratives of human relationships, those who seek sophisticated theatre addressing climate change are disappointed' (2012: 175). They align many of these plays with Mike Hulme's (2009) 'deficit model' of communicating climate change, in which the assumption is that scientists have 'the truth', which they only need to impart to the public for them to understand climate change. Hulme argues that this assumption does not engage people in scientific discourse. Instead of a deficit model, ideas of diversity, variety, circularity and multivocality are more effective in engaging the public on climate change. Rather than a pedagogic encounter or lecture, I take up the idea that theatre and performance can open up different and diverse ways of thinking about our relationship to ecology, through artistic and creative modes of engagement. It is theatre and performance that can embody and enact ecological thinking.

Despite the fact that the field is growing within theatre and performance studies, ecocriticism and environmental humanities, there is still a need for further scholarship and arts practice engaged in ecological thinking to be expanded to include more diversity (particularly ethnic, racial and geographic in terms of scholarship), in order to understand the potentialities of performance in engaging with this timely concern. By detailing performances that represent marginalised humans and more-than-humans, this book aims to contribute and expand the discourse further, building on the foundational work that has already been done.

Chapter Structure

In Chapter 1, I set out the theoretical foundations of my thinking on ecodramaturgies as intersectional ecologies. This approach is inspired by the Green Belt tree planting movement in Kenya, led by Wangari Maathai, which built a broad base of support and influenced Kenyan politics by connecting environmental issues to gender rights, political freedoms and colonial land management. Intersectional ecological thinking is both a way of looking and praxis. It is based on the idea that, on a global scale, ecological effects are unevenly disrupted and tied to social structures that disproportionately affect marginalised people such as women, people of colour, Indigenous peoples and the poor. Forgotten histories and the ongoing ecological effects of British colonialism in India are uncovered in the story of objects in the show-and-tell performance *Common Salt* (2018–2020) by Sheila Ghelani and Sue Palmer. Salt also functions as an ecological material and metaphor in *Salt*. (2016–2019) by Selina Thompson as she retraces the transatlantic slave trade, revealing the hidden connections between colonialism, slavery, bodies and ecological elements. *Then She Said It* (2002) by Osonye Tess Onwueme draws out the intersectional effects of a different global commodity as it focuses on oil extraction in the Niger Delta and the rural women carrying the burden of the effects. Through these works, I argue that ecodramaturgies can bring to light ecological injustices in theatre and performance through an approach of intersectional ecologies. This line of thinking is carried through in my theorisation of ecodramaturgies in subsequent chapters.

In Chapter 2 I argue for *bioperformativity* as an ecodramaturgical strategy for performance involving the nonhuman – one that queers ecology, disrupting the anthropocentric hierarchy through recognition of the capacity for agency and action in the more-than-human. My concept of bioperformativity is grounded in ecomaterialism and refers to the performativity of

more-than-human as lively material. Bioperformativity is enacted in the ecological agency of trees, particularly in Joseph Beuys' *7000 Oaks* (1982). UK performance company Fevered Sleep's *It's the Skin You're Living In* (2013) enacts bioperformativity and queer ecological thinking through the way it troubles distinctions between human, animal and climate in its structure, narrative, editing and images. Lucy + Jorge Orta's *Symphony for Absent Wildlife* (2014) and Fevered Sleep's *The Weather Factory* (2010) are analysed as affective metaphors for the way in which a non-anthropocentric sensibility can be communicated through performance practice particularly through their staging and scenography. These theatre and performance works challenge dominant anthropocentric representational modes and values through metaphors, images, forms, processes and material effects, adding further texture to ecodramaturgies.

Following that, in Chapter 3, I argue that theatre and performance can engage the body as in and of ecological matter and material, drawing out new frames of thinking about bodily relationships and encounters. Ecodramaturgies are theorised as an embodied practice that resonates and situates the performer/audience/participant within complex 'networks of risk, harm, culpability and responsibility' (Alaimo 2016: 3) as well as desire and pleasure. The ecological body is analysed in Mexican performance artist Violeta Luna's work *NK603: Action for Performer & e-Maiz* (2014) and Cherríe Moraga's *Heroes and Saints* (1994) to consider how environmental injustices are felt in the body. *Still Dance with Anna Halprin* (Stubblefield 1997–2000) and Ana Mendieta's *Siluetas Series* (1973–1980), further reveal the tension between bodies as 'natural', entangled, and inscribed with neoliberal values, gendered, raced and aged. Deke Weaver's immersive performance *Wolf* (2013) works to collapse separations between

human and ‘nature’ and human and ‘animal’, playing with familiar stories and tropes to draw out its ecological potency. Participation in global environmental politics in Rimini Protokoll’s *World Climate Change Conference* (2014) revisions some of the power structures that shape responses to climate change.

In Chapter 4, I think about how ecodramaturgies engage ideas of the Earth as home, which can be a hypothetical, imaginative, literal or material place. They can complicate binaries of local/global, public/private, home/outside world, drawing out racialised and gendered ideas of homes. Fevered Sleep’s *Above Me the Wide Blue Sky* (2013) and my own practice, *Trans-Plantable Living Room* (2013) both grapple with ideas of place, home and ecology revealing the dangers and complexities of nostalgia in the context of climate change. A recontextualisation of text, characters and place setting in *A Raisin in the Sun* (1959) by Lorraine Hansberry draws on bell hooks’ idea of ‘homeplace making’ (1990) as an entanglement of complex ecological relations of home that are also racialised, gendered and shaped by socio-political forces. As a counterpoint to home as a local idea of place, I suggest ecology is inherently bound up with home in a global context. Ecodramaturgies offer the potential to interrogate the relationship between the local and global, and heterogeneous ecological relationships and networks revealed in performance, specifically in form, structure and images in Sharon Switzer’s *#crazyweather* (2013) and Shonni Enelow’s *Carla and Lewis* (2014), extending the concept of eco-cosmopolitanism (Heise 2008).

Chapter 5, Decolonised Ecologies, further nuances ecodramaturgies through a critique of the Anthropocene and the way in which it erases difference and the unequal effects of climate

change. I argue that theatre and performance works can foreground and reflect this critique, particularly through Indigenous ecodramaturgies. Chapter 5 attends to the specific intersections of colonialism and the Anthropocene discourse and the way Indigenous ecodramaturgies are a way of decolonising the dominant idea of human as responsible for climate change. Colonialism has been suggested as one of the key markers to pinpoint the shift in epochs to the Anthropocene, placing the exploitation of Indigenous peoples and lands at the heart of the concept (Lewis and Maslin 2015). Indigenous ecodramaturgies are considered as a way of critiquing western binaries between human and nonhuman as well as revealing the way settler colonialist domination has had shared material effects on both environments and Indigenous communities. As a non-Indigenous person, I centre the voices and writing of Indigenous thinkers, activists and artists. A mix of Indigenous activist movements, including No Dakota Access Pipeline (NODAPL) and Idle No More, are analysed alongside the plays *Burning Vision* (Clements 2003), *Salmon is Everything* (May and Klamath Theatre Project 2014) and *Sila* (Bilodeau 2015) to foreground marginalised and erased ecological worldviews and traditional knowledge and different possibilities for what it means to be human.

To conclude, I discuss the ways in which ecodramaturgies can open up a space for imagining other ways of living together, exploring alternatives to capitalist logic of extractivism^{xi}. The dialogue-based performance, *WE KNOW NOT WHAT WE MAY BE* (Metis 2018), created a space to imagine a future based on principles of equality, ecological justice, citizen engagement and collective decision making. Audiences were able to talk to each other and make decisions about how they wanted the future to play out and then experience what the future might be like. A future based on low-carbon living, circularity and regeneration rather

than consumerism and wealth accumulation was envisioned through audience participation. Ecodramaturgies can perform other ways of looking at the future, imagining what it might mean to not accept the story of inevitable extinction, but playing with and performing potentialities and possibilities of living better together.

Theatre and performance are a part of wider cultural responses to rapidly changing ecological realities. Artistic and cultural practices and interventions are crucial to both understanding the complexities and injustices of our current context and imagining alternatives or what resistance looks like. I hope this book will make a contribution to these essential works.

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Notes

ⁱ The final stage of editing this book happened while the UK was in lockdown during the COVID-19 global pandemic in Spring 2020. The media, news and circumstances have changed drastically from a year ago.

ⁱⁱ Indigenous is capitalised throughout to refer to the identity 'Indigenous peoples'.

ⁱⁱⁱ David Abram's (1997) term.

^{iv} Chaudhuri's 1994 article was predated by Lynn Jacobson's 'Green Theatre: Confessions of an Eco-Reporter' in *American Theater* in 1992. *Greening up Our Houses: a guide to a more ecologically sound theatre* (1994) by Fried and May was also part of the first wave.

^v After the first wave, Chaudhuri has continued to be a leading voice in Performance and ecology. See Chaudhuri 1995, 2002, 2003, 2007, 2012, 2013, 2014, 2015, Chaudhuri and Enelow 2006, 2014, Fuchs and Chaudhuri 2002, Chaudhuri and Hughes 2014.

^{vi} As the second wave built momentum, special editions of journals on the subject were published including the *Journal of Dramatic Theory and Criticism* (Spring 2006) and *Theatre Topics* (Fall 2007); articles including

Standing (2005), May (1999, 2005), Kershaw (2002) as well as the books *Small Acts of Repair: Performance, Ecology and Goat Island* (Bottoms and Goulish 2007), *Theatre Ecology: Environments and Performance Events* (Kershaw 2007), *Green Shakespeare: From Ecopolitics to Ecocriticism* (Egan 2006) and *Green Theatre: Promoting Ecological Preservation and Advancing the Sustainability of Humanity and Nature* (Heinlein 2007).

^{vii} Each gathering is anchored by an Ecodrama festival and playwrights competition, which is an open competition to find new eco plays, with the winner and first runner up receiving workshop productions or staged readings. My work departs from this emphasis on playwrights to develop new work on the ecological themes and topics as I am interested in the experience and dramaturgical relationships in performance. The 2004 festival and symposium were followed up with a 10-day event at the University of Oregon in 2009 with keynotes by Una Chaudhuri and performance artist Rachel Rosenthal. The festival and symposium have continued to be held every four years in different places in the US, although to date, none have been on the scale of the 2009 event.

^{viii} The following is a list of books and journals that were published between 2010- early 2020: *Canadian Theatre Review* 'Theatre in an Age of Eco-crisis' (Gray and Rabillard 2010), *Ecology and Environment in European Drama* (Cless 2010), *Ecocriticism and Shakespeare: Reading Ecophobia* (Estok 2011), *Readings in Performance and Ecology* (Arons and May 2012), *Research in Drama Education (RiDE)* 'Environmentalism' (Heddon and Mackey 2012), *Performance Research* 'On Ecology' (Bottoms, Franks and Kramer 2012), *To Life!: Eco Art in Pursuit of a Sustainable Planet* (Weintraub 2012), *Landing Stages* (Heim and Margolies 2014); *Research Theatre, Climate Change, and the Ecocide Project* (Chaudhuri and Enelow 2014), *Enacting Nature: Ecocritical Perspectives on Indigenous Performance* (Däwes and Maufort 2014); *Performance on the Behalf of the Environment* (Besel and Blau 2014), *Rethinking the Theatre of the Absurd: Ecology, the Environment and the Greening of the Modern Stage* (Lavery and Finburgh 2015), *Ethics of Art: Ecological Turns in the Performing Arts* (Cools and Gielen 2014), *Theatre for Women's Participation in Sustainable Development* (Osnes 2013), *Playing for Time* (Neal 2015), *Performing Ethos* 'Performings Ecos' (Allen and Preece 2015), *Green Letters* 'Performance & Ecology: What can Theatre Do?' (Lavery 2016, edited collection Lavery 2018), *This Contentious Storm: An Ecocritical and Performance History of King Lear* (Hamilton 2017), *Performance Research* 'On Climates' (Fensham, Paterson and Rae 2018), *Theatre & Environment* (Angelaki 2019), *Performance Research* 'On Mountains' (Pitches and Shearing 2019), *Canadian Theatre Review* 'Extractivism and Performance' (Richards and Davis-Fisch Freeman 2020), *Performance Research* 'On Dark Ecologies' (Spalink & Winn-Lenetsky 2020), *Theatre Research International* 'Climate Change and the Decolonized Future of Theatre' dossier (Woynarski et al. 2020) in addition to a number of national and international conferences, symposia and individual journal articles (which have been excluded here for length).

^{ix} The Artists and Climate Change database have been keeping a list of climate change plays since 2014:

<https://artistsandclimatechange.com/2014/11/01/creating-a-list-of-climate-change-plays/>

^x The climate change dramas on London stages since 2009 include *The Contingency Plan* (Bush Theatre 2009), *Earthquakes in London* (National Theatre 2010), *The Oikos Project: Protozoa and Oikos* (Jellyfish Theatre 2010), *Greenland* (National Theatre 2011), *The Heretic* (Royal Court 2011), *Ten Billion* (Royal Court 2012), *2071* (Royal Court 2014), *Pastoral* (Soho Theatre 2013), *Lungs* (Paines Plough 2014, Old Vic 2019), *Mr. Burns* (Almeida Theatre 2014), *F*ck the Polar Bears* (Bush Theatre 2015), *Escaped Alone* (Royal Court 2016), *Oil* (Almeida Theatre 2016).

^{xi} Extractivism is the ideology that the resources of the earth can and should be extracted, removed or depleted for the use of humans and for profit, particularly if the resource is in high-demand (Klein 2014).