Scaling Forest Conservation: Strategic Agency and Systems Change in the Great Bear Rainforest and Canadian Boreal Forest Agreements

by

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Author's Declaration

This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Statement of Contributions

With the exception of parts of Chapter 4, all writing in this dissertation is solely the author's. Chapter 4 (Riddell, Tjornbo and Westley, 2012) has been published as "Agency and innovation in a phase of turbulent change: Conservation in the Great Bear Rainforest". I was the primary author of this chapter, with Ola Tjornbo providing additional research and editing, and Frances Westley providing conceptual material and editing.

Abstract

Transitioning resource industries towards sustainability poses system-wide innovation challenges. This manuscript-style dissertation analyzes two cases of Canadian forest sector innovation, the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreement (CBFA), using a sequential multi-paradigm theory-building approach (Lewis and Grimes, 1999). The research contributes new knowledge about the deliberate agency and cross-scale processes involved in advancing systemic social change, in particular the strategic action of civil society groups.

Chapter 4 applies theoretical lenses from resilience (Gunderson and Holling, 2002) and social innovation (Westley and Antadze, 2010) to analyze the individual and collective agency (Bandura, 2006) in the Great Bear Rainforest. Six patterns of agency are found which demonstrate links between the micro-level processes of personal transformation, generative meso-level group interactions, and macro-level systemic transformation. Chapter 5 applies the multilevel perspective (MLP) from sociotechnical transitions (Geels, 2005; Geels and Schot, 2007) to analyze how global campaigns harnessed collective and proxy agency (Bandura, 2006) to generate mutually reinforcing dynamics (Grin, 2010) and advance sustainability transitions in the forest regimes studied. Chapter 6 presents a framework for evaluating systemic impacts, drawing from institutional innovation (Hargrave and Van de Ven, 2006; Zeitsma and Lawrence, 2010) and social innovation (Westley and Antadze, 2010). The outcomes of the GBRA and CBFA are compared, and the GBRA is found to have significantly greater systemic impacts than the CBFA.

The conclusion presents an integrative model of the multi-level agency involved in systemic social change over time, with four patterns: 1) disruptive agency; 2) visionary-architectural system redesign; 3) relational and psycho-cultural change, and 4) mutually reinforcing distributed agency. The final pattern, mutually reinforcing agency, involves the ability to connect and orchestrate individual, collective and proxy agency across scales and over time as systemic changes are implemented. Together they suggest a more comprehensive theory for social change agency where the agency involved in transforming locked-in systems goes beyond system disruption and redesign, to include harnessing increasingly distributed forms proxy agency embedded in the global economy, supporting psycho-cultural transformations, and in cultivating mutually reinforcing agency across scales and over time.

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On the other hand, one's work *is* never done, one's offerings rarely feel enough, and that is life. I have been inspired along this journey by my friends and colleagues called to engage with the world's problems - through advocacy, community development, entrepreneurship, getting elected, educating hearts and minds, bridging sectors, crossing police lines or cultivating non-dual awareness. May we learn how to integrate these paths and embody change in new ways - and thereby stand a chance to avert planetary disaster. I thank my dear

friends in Drishti, who held the wisdom container for so many years as we found our way separately and together. Gail Hochachka and Lisa Gibson, I feel blessed to share this journey with you both, of love and loss, friendship and motherhood, awakening and evolution. There are many other people who have woven into my life during the course of writing this dissertation, but Al Etmanski and Vickie Cammack were a particularly colorful thread as mentors, cheerleaders and fellow explorers. The Third Inflexion Point has been a space of fertile inquiry and deepening connection, with the added joy of the wise women! Vickie, Delyse, Kelly, and Tatiana, our dialogues are precious, but the heart of our time together is the spacious and loving presence we share.

To everyone I mention here, and those I did not mention but helped along the way, thank you so much for your support. I hope my work provides some inspiration. After putting forth this cognitive effort, I offer it back into the space of not knowing…

Terra Incognita
There are vast realms of consciousness still undreamed of
vast ranges of experience, like the humming of unseen harps,
we know nothing of, within us.
Oh when man escaped from the barbed wire entanglement
of his own ideas and his own mechanical devices
there is a marvelous rich world of contact and sheer fluid beauty
and fearless face-to-face awareness of now-naked life
and me, and you, and other men and women
and grapes, and ghouls, and ghosts and green moonlight
and ruddy-orange limbs stirring the limbo
of the unknown air, and eyes so soft
softer than the space between the stars.
And all things, and nothing, and being and not-being alternately palpitate,
when at last we escape the barbed wire enclosure
of Know Thyself, knowing we can never know,
we can but touch, and wonder, and ponder, and make our effort
and dangle in a last fastidious delight
as the fuchsia does, dangling her reckless drop
of purpose after so much putting forth
and slow mounting marvel of a little tree.

- D.H. Lawrence

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List of Abbreviations and Acronyms

BC - British Columbia
CBFA - Canadian Boreal Forest Agreement
CFCI - Coast Forest Conservation Initiative
CIII - Conservation Investments and Incentives Initiative
CIT - Coast Information Team
CSA - Canadian Standards Association
ENGO - Environmental Non-Governmental Organization
FSC - Forest Stewardship Council
GBR - Great Bear Rainforest
GBRA - Great Bear Rainforest Agreement
JSP - Joint Solutions Project
LRMP - Land and Resource Management Plan
NSMD - Non-state market-driven mechanism
MB - MacMillan Bloedel
MLP - Multilevel Perspective on Transitions
SFI - Sustainable Forestry Initiative
STT - Sociotechnical transitions
RSP - Rainforest Solutions Project
WWF - World Wildlife Fund

Introduction

Humanity is in a state of "overshoot" (Galaz et al., 2012). The cumulative level of human activities is depleting natural capital, degrading ecosystems, and causing unprecedented changes to key planetary cycles – a situation which threatens global ecosystems and species but will also foreclose options for human and social development, and exacerbate many of the problems contemporary societies face (Galaz et al., 2012; Metz, 2007; Millennium Ecosystem Assessment, 2005). To avoid catastrophic overshoots of planetary boundaries, humans will need to make radical reductions of energy and material throughput, and transform global systems of production and consumption into more sustainable and resilient forms (Galaz et al., 2012; WCED, 1986). These changes would require re-conceptualization of the purposes and organization of human institutions on a scale unprecedented in human history. People from different countries, worldviews, and sectors must collaborate - and will also inevitably find themselves in conflict. While the 21st century already shows signs of becoming an era of social, political, economic and ecological instability, it could also be a time of positive adaptation and innovation in human institutions, beliefs and behavior. It is by no means certain humanity will be able to muster coordinated or effective responses of this scope. If we are to respond at a scale commensurate with the problems we face, new knowledge is needed to inform systemic change efforts. In order to disrupt existing institutions and impact broader systems, social change efforts must be increasingly deliberate, and able to span political, geographic, and ideological boundaries (Westley and Antadze, 2010).

This dissertation contributes new insights about how individuals and groups of people develop innovative responses to societal challenges, crossing scales and social boundaries in the process. The research takes a multi-paradigm approach (Lewis and Grimes, 1999) to investigate two cases of forest sector innovation in Canada - the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreement (CBFA). Environmentalists,

forest companies and other stakeholders negotiated new solutions to the social-ecological challenge of conserving endangered forests and sustaining forest-dependent livelihoods. Their efforts span a 20-year time period, impacting forest management on British Columbia's coast and across the Canadian boreal forest, as well as global supply chains for forest products. The cases involve most of the forest companies operating in Canada - members of the Forest Products Association of Canada (FPAC). The two Agreements provide long-term case studies for my research purpose, which is to gain deeper insight into the deliberate agency and cross scale processes involved in advancing transformative social change, in particular illuminating the role civil society actors can play in shifting entrenched, unsustainable systems of production and consumption. My secondary research goal is to contribute to the growing body of theory on large-scale or systemic change, by analyzing the cases through multiple theoretical lenses, clarifying the contribution of different paradigms, and providing a meta-paradigm synthesis of key patterns of agency and cross-scale dynamics involved.

Background of the Problem

The complex challenges faced by contemporary society have been labeled wicked problems (Rittel and Webber, 1973) to underscore their nature as difficult to define and bound, socially contested, context-dependent, emergent, and with no discernable end point. Currently, the amount of wicked, intractable problems in the world far outweighs the supply of solutions coming from governments, business, civil society or other sectors of society. This implies we are faced with an "ingenuity gap", which demands a growth in innovative responses to the challenges of today and the future (Homer-Dixon, 2000). New forms of knowledge and practice are necessary to respond to wicked problems with sufficient depth and scope. Sustainability challenges, and the associated need to transition major resource industries away from ecologically destructive practices are one example of wicked problems. Lawrence and Despres (2004) argue that one of the largest obstacles to addressing

sustainability problems is the lack of ontological frameworks that embrace the complexity of natural and human systems, calling transdisciplinary theory development a basic necessity.

There is growing consensus that responses to wicked problems must be informed by complexity and evolutionary systems lenses, and must span and integrate multiple contexts, scales, domains of knowledge and divergent perspectives (Funcowitz & Ravetz, 1993; Rammel et al., 2004). New ways of conceptualizing human agency are required to account for the interplay between deliberate change efforts and complex systems dynamics, especially with humanity's ever-increasing impacts on natural systems (Bandura, 2006). This interplay takes place across larger and smaller scales of geographic and institutional organization, so theories of change must also illuminate "cross-scale dynamics" (Westley and Moore, 2009) and the increasingly distributed nature of people's impacts on the world. Below, I further describe the need for transdisciplinary dialogue to advance address complex problems, and the knowledge gap surrounding agency and change in multilevel systems.

The field of social innovation is emerging as a dialogue between scholars and practitioners in order to engage with contemporary problems in innovative ways. Haxeltine, Wittmayer and Avelino (2013) see social innovation as a place where discourses on large-scale societal or systemic change can meet in response to the intractable social and ecological problems faced in the 21st century. Westley and Antadze define social innovation as "a complex process of introducing new products, processes or programs that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs" (2010, p. 2). Their definition emphasizes profound changes in social systems, and is informed by Giddens' (1984) definition of *social structure* as normative rules, interpretive rules, and allocative and authoritative resources. For a social innovation to have broad or durable impact, it will affect the fundamental distribution of power and resources, increase social resilience through the re-engagement of vulnerable populations, and challenge dominant institutional

rules (Westley and Antadze, 2010). Complementary social innovation approaches emphasizing system-wide outcomes have been called *transformative social innovation* (Haxeltine et. al, 2013), *systemic innovation* (Mulgan and Leadbeater, 2012) and radical or *catalytic innovation* (Christensen, Baumann, Ruggles & Sadtler, 2006). These kinds of innovation disrupt existing patterns of production, consumption and distribution, and address social issues with a fundamentally new approach (Caulier-Grice, Davies, Patrick & Norman, 2012; Westley et al., 2014). Mulgan defines systemic innovation as an interconnected set of innovations, where each influences the other, with innovation both in the parts of the system and in the ways in which they interconnect (Mulgan and Leadbeater, 2012). When the whole identity of a system changes, this is referred to as transformative change (Walker et al., 2004), which in social systems involves the macro-level of institutions (Westley and Antadze, 2010). This disruption of larger institutional contexts "demands innovation across multiple scales" and can be advanced by actors capable of connecting the innovation to political, cultural or economic opportunities as they emerge and ripen (Westley et al., 2011, p. 767).

As a discursive crossroads, social innovation theorists can draw from a cluster of change- and innovation-oriented disciplines in order to answer critical questions about the process and practice of social change in complex systems. Over the last two decades several bodies of theory and practice focused on social-systemic change have developed in parallel. These theories converge in their attention to some common elements: the co-constitutive relationship between agency and structure and concepts of "embedded agency" (drawing on Giddens, 1979; 1984), the importance of multi-level dynamics in evolutionary change processes, and the emergent, complex and phased nature of change. In order to enrich the conceptual resources available for analyzing the agency involved in large-scale change processes, this research therefore draws on elements from the following theories: social innovation, which builds on resilience insights to illuminate the complex process of deliberately introducing novelty in order to transform social systems (Caulier-Grice et al., 2012; Mulgan, 2007; Westley et al., 2006;

Westley and Antadze, 2010); resilience, which looks primarily at adaptive and transformative processes in linked social-ecological systems (Gunderson and Holling, 2002; Walker et al., 2006); socio-technical transitions theory, which analyzes how regimes of production and consumption can be transitioned toward sustainability through the introduction of niche innovations, using evolutionary, complexity, and constructivist lenses (Geels, 2010; Grin et al., 2010; Kemp & Rotmans, 2004); and finally neo-institutional theory, which uses constructivist and discursive approaches to analyze organizational and field dynamics within institutions. Neo-institutional theorists (Powell and DiMaggio, 1995; Scott, 1995) look at symbolic boundaries of institutions, and how political and social movement struggles shape meaning, mobilize resources, and confer new legitimacy (Granovetter and McGuire, 1998; Garud and Karnoe, 2001; Lounsbury et al., 2003) through phases of institutional stability and disruptive change (Maguire and Hardy, 2009; Zeitsma and Lawrence, 2010).

A complexity or systems-based approach to agency conceptualizes change as an emergent process of interactions between deliberate agency and structural conditions across many levels of organization. This poses theoretical challenges because it can be difficult to ascribe direct causality to the work of actors. New theories of agency are needed that illuminate, without privileging, the influence of individual actors in disrupting and innovating new institutional arrangements (Riddell et al., 2012). A complexity- and agency-based approach contrasts with heroic leadership-based models of organizational change, and is more appropriate for theorizing in complex social-political domains (Westley et al., 2006). Bandura makes distinctions between the personal, collective and proxy agency involved in humans deliberately acting to influence their life circumstances, and the resources and self-reflexive capacities necessary to sustain such agency (2001; 2006). Yet, these three aspects of agency have not informed consideration of multi-level institutional change or the work of specific actors, such as those from civil society, to better understand how agency may function in

increasingly distributed socio-economic contexts and where human activities make us increasingly intertwined.

Knowledge gaps have also been identified across diverse research communities regarding the agency of civil society organizations and social movements in catalyzing institutional change (Meadowcroft, 2012; Maguire and Hardy, 2009; Lawrence and Suddaby, 2006). While social movements are recognized as key to advancing the discourse, socio-political framing and debate necessary for sustainability transitions (Geels, 2010; 2011; Maguire and Hardy, 2009; Smith, Voß and Grin, 2010), Smith and Sterling (2012) identify the need for more political and power analysis in transitions theory, and more attention on the role global social movements play in the governing social-ecological systems and socio-technical systems. Institutional and organizational theorists use the concept of *institutional entrepreneur* to describe individuals who work to embed innovation into social structures, leveraging resources in order to create new institutions or transform existing ones (DiMaggio, 1998; Maguire et al., 2004). Institutional entrepreneurs are seen as having an ability to work within complex institutional contexts to navigate opportunities, frame solutions through new discourse, create political coalitions, and connect innovative practices to windows of opportunity by being attuned to cross-scale interactions (Battilana et al., 2009; Dacin et al., 2002; Dorado, 2005). Despite the growing interest in institutional entrepreneurship as a way to transform entrenched institutions (Scully and Levy, 2007), there is a need for more research on 'outsider-driven' de-institutionalization, or institutional change that is driven specifically by outside actors such as activists (Ahmadjian and Robinson, 2001; Lawrence and Suddaby, 2006; Maguire and Hardy, 2009). This includes a need for research that looks at how activist strategies can translate into other innovation contexts or work in concert with efforts from other sectors to shift unsustainable institutional patterns.

Systemic change theories place importance on both the *process* and the *outcomes* of

initiatives (Geels and Schot, 2007; Haxeltine et al., 2013; HUBERT, 2010; Westley and Antadze, 2010; Zietsma and Lawrence, 2010), and new methods are needed to analyze and understand both these dimensions of innovation, which will involve interdisciplinary approaches to data (OECD, 2010) and also post-positivist interpretations of social change efforts (Patton, 2011). Mulgan et al. (2007) call for more extensive and historically situated research on how social innovation happens and how it can be enabled, in order to inform practical action. This can be aided by case studies that provide analysis of critical success factors and potential inhibitors throughout the innovation process (Mulgan, 2007). Looking specifically at social sector innovation, Seelos and Mair (2012) stress the need to go beyond treating innovation as an outcome to analyze innovation processes across multiple levels integrating individual, group, and organizational, as well as cognitive and behavioral dimensions. They further point to the need to look over time at differences in innovation process, influencing factors, and outcomes across cultural and spatial dimensions.

Each theoretical strand explored in this dissertation contributes a unique focus and set of concepts for analyzing the dynamics of change in social systems, and in the case of resilience theory, ecological systems. In this manuscript-style dissertation I take a multi-paradigm research approach (Lewis and Grimes, 1999) to enrich the dialogue on system change and social innovation, in part by sharpening the essential concepts shared by the change-oriented theories applied here, and further by pointing to synergies and lacunae that can inform further practical and research collaborations in this growing transdisciplinary field concerned with large-systems change. With some exceptions (e.g. Cajaiba-Santana, 2013; Smith and Sterling, 2010; Geels, 2010; 2013), these theories have not been extensively cross-pollinated. Yet, there are surprising overlaps and similarities among them. I review each theory (social innovation, resilience, sociotechnical transitions and institutional theory) in Chapter 2, and discuss their complementarities, divergences and lacunae. Following this, I develop a meta-theoretical framework that guides research in the following chapters.

Statement of the problem

In order to inform increasingly deliberate and collective responses to the social and ecological challenges of the 21st century, new conceptual frameworks are needed. Such approaches must address the emergent and multi-level dynamics involved in social change processes, as well as the roles and strategies of different actors in society. Multi-paradigm and transdisciplinary knowledge development is a necessity for breaking down silos and addressing joined-up problem contexts. And, as more deliberate efforts are directed to solving problems, theories of agency are needed that address the constraints and possibilities of individual and group action, within the context of socio-economic globalization and nested ecological systems where local and global processes interact in complex ways. In particular, more needs to be known about the role civil society actors can play in shifting locked-in, unsustainable institutions. Both theorists and practitioners of change need this new knowledge, given the urgency involved in addressing complex social-ecological challenges, and the emergent and distributed nature of the learning by actors in all sectors of society.

Purpose of the study

The purpose of my research is to advance transdisciplinary theorizing in complex, cross-scale problem domains to gain insight into effective actor strategies for transforming entrenched institutions into more life-sustaining forms. This research contributes new knowledge about the deliberate agency and interacting cross-scale processes involved in advancing transformation in Canadian forest regimes, in particular the role of civil society actors who advanced cross-scale strategies that resulted in new regional policies and practices, as well as influencing the global supply chain for forest products. Additionally, this study cross-pollinates across an emerging body of transdisciplinary, multi-level, process-based theories to bring new theoretical resources and understanding of large-systems change processes. Through a multi-paradigm research approach (Lewis and Grimes, 1999), I analyze linked cases of forest regime transformation in Canada, to discover more about the agency and

cross-scale dynamics involved in systemic change, and gain insights into effective strategies. By bringing several theories of change together, my research provides new insights into the *process* of change across scales, the roles and dynamics of social change *agency*, and the *systemic or institutional impacts* resulting from the co-emergence of deliberate change efforts and systems opportunities. By applying multiple theoretical lenses, I contribute to the growing body of theory and research on large-scale systems change, pointing to further integration-points and new research questions.

This research profiles two Canadian examples of multi-sector innovation in the forest industry, leading to large forest conservation agreements - British Columbia's Great Bear Rainforest Agreement, and the Canadian Boreal Forest Agreement. As part of a larger suite of strategies environmentalists have pursued over a 20-year period, the two Agreements aim to prevent the loss of endangered forests, implement more sustainable forest management regimes, secure market access for participating companies, and shift global forest products supply chains towards ecological and social sustainability. Together, the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreement (CBFA) have affected forest management on over 80 million hectares of forestland in Canada, which is the world's largest exporter of forest products. The Agreements were catalyzed by transnational environmental campaigns where environmentalists used deliberate tactics to generate conflict and disrupt forest regimes, while also advancing innovative alternatives and enlisting collaboration from the forest industry representatives, First Nations, and other stakeholders - all of which was initiated outside of formal government processes. Insights from this research will be useful to change practitioners in different sectors: civil society and philanthropic organizations, business leaders and policy actors, as well as academics working within the four theoretical frameworks I use here, and those interested broadly in systemic and social change processes and finding solutions to societal problems.

Significance of the Study

The study contributes both new theory and new knowledge about the dynamics of cross-scale change agency capable of disrupting locked-in systems and advancing more ecologically and socially sustainable institutional forms. Through the multi-paradigm review of social innovation, resilience, sociotechnical transitions and institutional theory, some core conceptual lenses useful for analyzing agency and cross-scale processes are clarified. These lenses form a unique theoretical framework, which informs a meta-paradigm model on cross-scale agency through phases of system innovation. This model is a unique theoretical contribution to existing theories of agency, social innovation, and systemic change.

British Columbia has attracted public, media and scholarly interest as an example of how forest-related conflict led to innovation in regional governance regimes. Yet these struggles and the innovative governance responses that emerged are part of much larger systems change dynamics, fostered in part by the strategies pursued by environmental activists. The cases of environmental and social conflict exemplified in the Great Bear Rainforest and Canadian Boreal Forest cases also contain important insights as climate change advocates marshal increasingly global strategies and face off against locked-in systems of production and consumption with vast, dispersed citizen participation, and governments with varying levels of willingness to act. Framing the Great Bear Rainforest and Canadian Boreal Forest Agreements as 'social innovations', when they have largely been framed as innovative environmental policy and governance initiatives, is deliberate. The discourses on social innovation, institutional transformation and sustainability are deeply inter-related, and benefit from being considered together. To date, the field of social innovation has focused primarily on meeting social needs, and the discourse largely proceeds in the absence of concepts of ecological footprint or overshoot, and seemingly without deep attunement to the urgent and

profound threat that climate change and other forms of ecological degradation pose to social, economic, and political systems at all levels in the coming decades. Because pressures on human systems are interdependent, cases that illuminate their interconnections can make an important contribution to the social innovation literature and more broadly to resilience, sociotechnical transitions, and institutional innovation theories.

Through deeper analysis of the deliberate efforts to transform the forest regime in Canada this research provides original findings about the multi-level and distributed patterns of social change agency involved in catalyzing change in entrenched institutions. The findings suggest a more comprehensive theory for social change agency, emphasizing how different forms of agency span social structures over time and space from the personal to the systemic. This research also provides new insights about the interrelatedness of local and global change efforts, and the role civil society actors have played, and may play in the future, to disrupt locked in industries and supply chains, and advance transformative social change.

Research Questions

The overall purpose of this research is to contribute new knowledge about the agency and cross-scale processes involved in systemic social change efforts. In addition, I wish to advance the transdisciplinary theoretical resources available for tackling wicked social-ecological problems through a multi-paradigm research approach.

My over-arching research questions are:

1) *What theoretical and practical insights emerge from taking a multi-paradigm approach to analyze the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement?*
2) *Specifically, what forms of agency and cross-scale strategies catalyzed change in unsustainable, locked-in institutions and advanced transformative change?*

Secondary research questions that guide each chapter are:

Chapter 4: *What are the individual and collective processes of agency that catalyze systems change?*

Chapter 5: *How did the strategies of transnational environmental actors encourage sustainability transitions in the Great Bear Rainforest and Canadian Boreal Forest Agreements? What does analysis of environmental actor strategies contribute to the understanding of agency and multi-level interactions in sustainability transitions literature?*
Chapter 6: *How can the systemic or transformative impacts of social innovation be evaluated? What insights are generated about the process and outcomes of social innovation by comparing the Great Bear Rainforest and Canadian Boreal Forest Agreements through the lens of institutional theory?*

Transdisciplinary and Multi-paradigm Research

This study is integrative, transdisciplinary and oriented towards solving life-world problems (Klein et al., 2001; Hirsch-Hadorn et al., 2006). There are countless ways to approach transdisciplinary research. In *multi-paradigm research* the researcher applies different paradigms and their methodological approaches to generate insights from their interaction (Lewis and Grimes, 1999; Lewis and Keleman, 2002; Weaver and Gioia, 1994). Broadly, the term paradigm can refer to any philosophical or theoretical framework. Thomas Khun defined a paradigm as a universally recognized scientific achievement that for a time provides model problems and solutions to a community of practitioners (Kuhn, 1970, viii). Burell and Morgan (1979) extended Khun's use of the term into the social sciences – and organizational theory in particular, to refer to a commonality of perspective that binds a group of theorists together (p.23), whereas Guba and Lincoln (1994) characterize four competing paradigms guiding research and inquiry in the social sciences - positivism, post-positivism, critical theory and constructivism - each with a particular ontology and epistemology and methodology.

This study uses the broader definition of paradigm, and the terms theory and paradigm are used interchangeably herein to refer to the theoretical frameworks and related research practices and communities associated with resilience, sociotechnical transitions, social innovation, and institutional theory. From an organizational or research paradigm perspective (e.g. Burrell and Morgan, 1979 or Guba and Lincoln, 1994), these four theoretical frameworks

all represent paradigmatic hybrids, rejecting positivism, but weaving constructivist, critical and post-positivist epistemologies together into middle-range theories designed first and foremost to provide solutions to pressing social and ecological problems. Further discussion on their common antecedents and ontological-disciplinary orientations can be found in the theoretical framework (Chapter 2).

Van de Ven and Poole speak to the value of applying different conceptual lenses to better understand change processes: "It is the interplay between different perspectives that helps one gain a more comprehensive understanding of organizational life, because any one theoretical perspective invariably offers only a partial account of a complex phenomenon." (1995, p. 515). Comparison of multiple paradigms can expose the underlying values and assumptions in each, and their unique contributions, overlaps, blind spots, lacunae, and complementarities with other theories. According to Lewis and Grimes (1999), theorists can use multiple paradigms as heuristics to explore theoretical and organizational complexity. Through a multi-paradigm perspective, transdisciplinary researchers can tease apart, reconstruct, and transform bodies of knowledge through their encounter with one another (Wickson, 2006). Lewis and Keleman (2002) enumerate further benefits: "Multi-paradigm research seeks to cultivate diverse representations, detailing the images highlighted by varied lenses. Applying the conventions prescribed by alternative paradigms, researchers develop contrasting or multi-sided accounts that may depict the ambiguity and complexity of organizational life" (p. 263).

Lewis and Grimes (1999) distinguish three kinds of multi-paradigm research: *multi-paradigm reviews* characterize differences and bridges between existing theories; *multi-paradigm research* applies different paradigm lenses empirically to collect and analyze data, and illuminate diverse representations of phenomena; and finally, *meta-paradigm theory-building* refers to a holistic approach that aims to transcend paradigm distinctions through juxtaposing and linking conflicting or disconnected paradigm insights within a novel understanding. In

multi-paradigm research, researchers use multiple paradigms (and their methods, frameworks, and foci) to collect and analyze data, and develop diverse representations of complex phenomena (Lewis and Grimes, 1999). *Parallel studies* seek to preserve and amplify theoretical conflicts or differences, demonstrating what explanatory mechanisms, voices and images are foregrounded by opposing lenses. A classic example of a parallel study is Graeme Allison's (1971) treatment of the Cuban Missile Crisis through different international relations and political theory lenses, where he contrasts the explanatory mechanisms and findings of different theoretical analyses of the event. In *sequential studies,* researchers apply different theoretical lenses successively, to purposefully inform one another, where the outputs of one study provide inputs to the subsequent study - often through a mixed methods approach. By applying different theoretical lenses in succession, theorists seek to grasp their disparate yet complementary aspects (Lewis and Grimes, 1999). This dissertation contains elements of a multi-paradigm review in Chapter 2, sequential multi-paradigm research in Chapters 4-6, and meta-paradigm theory-building in the extended conclusion that synthesizes the findings into a meta-theoretical framework for understanding processes of cross-scale agency over time. These elements are further explained below.

Another useful distinction in the study of innovation in social systems is between global and local theories, which Poole and Van de Ven (1989, p. 643) portray as complementary approaches: "The global (macro, long-run) model depicts the overall course of development of an innovation and its influences, while the local (micro, short-run) model depicts the immediate action processes that create short-run developmental patterns. (. . .) A global model takes as its unit of analysis the overall trajectories, paths, phases, or stages in the development of an innovation, whereas a local model focuses on the micro ideas, decisions, actions or events of particular developmental episodes." Because this research seeks to bridge the global and local, I use agency theory (Bandura, 2001, 2006) to gain insight into the local patterns of ideas, decisions and actions. The additional paradigms I apply largely identify as "middle-

range" process theories, which seek to identify global patterns, but also to stay in relation to smaller-scale patterns of behavior and action.

Multi-paradigm research and the use of both local and global theories enable opportunities for meta-triangulation, which is somewhat analogous to traditional triangulation (Gioia and Pitre, 1990). Initial groundwork identifies and defines the theoretical perspectives to be applied (multi-paradigm review), then data analysis occurs through each lens (multi-paradigm research), and theory is developed to account for and integrate different interpretations of data (meta-paradigm theory building). This three-step process complements triangulation between the three typical sources for data analysis: existing literature, empirical data, and the intuition, experience and common sense of theorists (Charmaz, 2006). The critical reflection and kaleidoscopic viewing required when considering a case through multiple perspectives places reflexive demands on the researcher. By considering analysis through multiple paradigm lenses, I am involved in a reflective and transformative process to bridge knowledge across paradigms while also paying attention to paradigmatic biases (Lewis and Grimes, 1999; Wickson, 2006). The next sections describe the overall research approach, methods, data collection processes and instruments used, and includes a discussion of validity, limitations and scope.

Research Approach

As noted above, this dissertation contains all three elements of multi-paradigm research described above by Lewis and Grimes (1999). In Chapter 2, I conduct a multi-paradigm review in order to represent, compare and contrast the selected theories. To ensure an accurate interpretation of each theory, I immersed myself in their discourse, debates, literatures and scholarly communities - reading extensively, engaging in scholarly discussion, attending conferences and writing from the different perspectives. In so doing, I became sensitized to aspects each theory foregrounded, as well as their blind spots, lacunae, and complementarities.

Comparative theoretical insights are contained in Chapter 2, and also in the conclusions of Chapters 4-6, and in the final dissertation conclusion. After the multi-paradigm review, I develop a meta-theoretical framework to synthesize selected core lenses from social innovation, resilience, sociotechnical transitions and institutional theory to inform inquiry into the agency and cross-scale dynamics involved in deliberate systems change and social innovation. This meta-theoretical framework guides my application of conceptual lenses in subsequent chapters, illuminating different aspects of the process, agency and impacts involved in the Great Bear Rainforest and Canadian Boreal Forest Agreements. To clarify, I selected conceptual lenses from within each focal paradigm best suited to addressing my research questions about agency and cross-scale dynamics. The meta-theoretical framework does not attempt a full integration of these four theories, but rather is used to gain a multi-faceted view of the research phenomena and to advance meta-theoretical dialogue, using the selected lenses and research phenomena as a starting point. I return to the meta-theoretical framework to synthesize the research findings from Chapters 4-6, and produce a model that integrates the processes of cross-scale agency I discover. In Chapters 4-6, I undertake a modified version of sequential multi-paradigm research, which is described in more detail in the next paragraph and depicted in Figure 1. The theories are used as methodological lenses through which case narratives are analyzed.

This dissertation is in the manuscript style, in accordance with the procedure and approach specified by the Environment and Resource Studies department and the University of Waterloo. As such, chapters 4, 5 and 6 are written as individual, stand-alone articles. They are also parts of an integrated whole that explores my primary research question through different lenses to generate original insights into the dynamics of the two cases. In each chapter I apply a distinct theoretical perspective to the empirical research cases of forestry regime transformation in the GBRA and CBFA. Chapters 4, 5 and 6 were written sequentially, and reflect my deepening understanding of the cases as I applied conceptual lenses from

different paradigms to analyze the data. Research for each chapter was framed by my primary research question, but included a more specific secondary research question, based on the central paradigm in the chapter. These secondary research questions are listed below. Instead of applying each paradigm in isolation (in parallel or sequentially), my research design applies one of the core paradigms - resilience theory, sociotechnical transitions, and institutional theory - along with social innovation theory. In this way the research combines lenses to illuminate particular dynamics at different scales and phases (see Figure 1). Chapters 4 and 5 are focused on the process of change and patterns of agency involved in the GBRA and CBFA. As discussed above, I also integrate Bandura's agency theory (2001; 2006), to add a "local" theoretical perspective on the psychological and relational processes of individual and collective agency in Chapter 4, and to further explore proxy agency in Chapter 5.

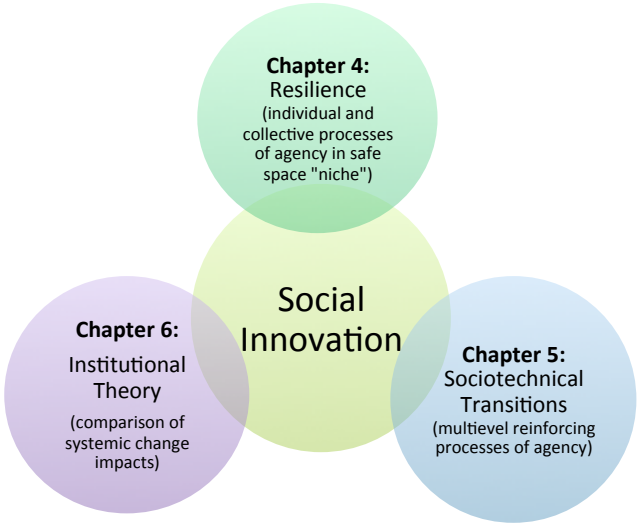

Figure 1. The multi-paradigm approach: theoretical lenses and concepts in each chapter

Change in forestry regimes in Canada over the 20-year period from 1993 - 2013 occurred at the regional level (GBRA), national level (CBFA) and international level (marketplace change). Chapters 4 and 5 explore the agency and change process involved in advancing the GBRA and CBFA at different scales of analysis. Chapter 4 introduces the Great Bear Rainforest case, and applies the lenses of resilience (Gunderson and Holling, 2002), social innovation (Westley and

Antadze, 2010) and agency (Bandura, 2001; 2006) to answer the research question: *what are the individual and collective processes of agency that catalyze systems change?* The research focal area widens as the dissertation progresses. Chapter 4 begins by looking at micro- and meso-level processes of agency during a phase of turbulent change, in the "safe solutions space" for negotiations between environmentalists, forest companies and other actors. Chapter 5, applies the multilevel perspective from sociotechnical transitions theory (Geels, 2005; Rip and Kemp, 1998) and agency theory (Bandura, 2001; 2006) guided by two research questions: *how did the strategies of transnational environmental actors encourage sustainability transitions in the Great Bear Rainforest and Canadian Boreal Forest Agreements? And, what does analysis of environmental actor strategies contribute to the understanding of agency and multi-level interactions in sustainability transitions theory?* Chapter 5 widens the subject of study to look at both the GBRA and CBFA through the multi-level perspective, adding the conceptual lenses of distributed agency and mutual reinforcement dynamics from Grin et al. (2010), and collective and proxy agency from Bandura (2001). In Chapter 6, I explore the systemic change impacts of each Agreement, using social innovation and institutional lenses to create a framework for evaluating social innovation as institutional change. The research questions are: *how can the systemic impacts of social innovation be evaluated? What insights are generated about the process and outcomes of social innovation by comparing the Great Bear Rainforest and Canadian Boreal Forest Agreements through the lens of institutional change?* This chapter also identifies conditions and factors over time that have led to more and less radical changes in each forest regime.

Research Methodology

In order to take into account the complexity and context inherent in social innovation problem domains, methodological frameworks must attend both to the *process* and *outcomes* of change and account for the interplay between agency and structure (Antadze and Westley, 2012; HUBERT, 2010; Phills et al. 2008). *Process theories* are well-suited to application in complex problem domains, because they illuminate chains of events where actors interact with

one another and with social structures and explain outcomes as the result of sequences of events, influenced by timing and the confluence of different events and situations (Abbott, 2001; Pettigrew, 1997; Poole et al., 2000). Change processes and the agency involved in them can be captured in narratives that depict processes, events and actor stories. Narratives can enable theoretical development by highlighting patterns of behavior and providing more complex explanations for how relationships between actors and social systems occur, and how individuals make meaning about, shape and are impacted by social contexts over time (Cajaiba-Santana, 2014). My research aimed to capture the narrative involved in the change processes I studied, and included the development of more comprehensive stand-alone case narratives for both the Great Bear Rainforest Agreement (Riddell, 2009; Tjornbo, Westley and Riddell, 2010) and for the Canadian Boreal Forest Agreement (Riddell, *in press*) that are not included in this dissertation.

This study of the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement drew upon interviews, secondary materials, academic literature, my personal experience working on the Great Bear Rainforest Agreement, and original internal source material from agreement signatories. This diversity of sources enabled me to gather multiple descriptions of the unfolding of events in order to add rigor and validity to the data. The formal research for this dissertation was conducted 2009 - 2011 through open-structured interviews with 20 individuals who represented the major signatories to the CBFA, plus two process facilitators (see interview protocols in Appendix A and B) The interviews were 90 minutes to two hours in length. I also conducted 3 follow-up interviews with CBFA signatories. Six individuals interviewed during this period, including two forest industry representatives, one process facilitator and three representatives from environmental organizations, were involved in both the CBFA and the GBRA processes, and were asked comparative questions. Interviews were open-structured qualitative interviews, based on methods described by Kvale and Brinkmann (2009). A longer narrative monograph on the CBFA with additional primary quotations is

forthcoming (Riddell, *forthcoming*). I conducted previous research on the Great Bear Rainforest in 2008-2009 for a narrative case study (Tjornbo, Westley and Riddell, 2010), and I conducted five additional interviews with ENGO representatives to gather data for Chapter 4 (See Appendix B for interview protocols). Finally, I have written about the Great Bear Rainforest case previously (Riddell, 2005; 2009), and some of the case details were drawn from this research, and source materials related to my work with Sierra Club and ForestEthics.

Great Bear Rainforest interview participants were drawn from Coastal First Nations, Forest Ethics Canada, Greenpeace Canada, BC Ministry of Forestry, Mines, and Lands, Packard Foundation, Sierra Club of BC, Tides Canada Foundation and Weyerhaeuser. Representatives involved in both Agreements worked with West Fraser Ltd., Canfor, Canopy, Greenpeace, and ForestEthics, and also include the lead process facilitator from the CBFA and GBRA negotiations. Interview participants for the CBFA case included staff and leadership from the Forest Products Association of Canada (FPAC), representatives from the Canadian Boreal Forest Agreement Secretariat staff and steering committee, senior forest company executives from Resolute Forest Products (formerly AbitibiBowater), Canfor, Tembec, Tolko and West Fraser ltd., and environmental representatives from the Canadian Parks & Wilderness Society, Canadian Boreal Initiative, Ivey Foundation, Pew Environment Group International Boreal Campaign, ForestEthics, Canopy and Greenpeace. (See Appendix C for a full list of interviewees).

Using coded data, I constructed narratives for each case, based on case study strategy (Yin, 2009) and a modified grounded theory approach (Charmaz, 2005). Grounded theory lends itself to gaining insight into basic social and social psychological processes, placing the study of action central, and enabling the creation of abstract interpretations of data (Charmaz, 2006). According to Charmaz, (2006, p. 19) grounded theory allows for learning about both general and specific phenomena, enabling a comparison from data "reaching up to construct

abstractions and simultaneously reaching down to tie these abstractions to data." This method is useful in conceptual analysis of patterned relationships. Interview transcripts were coded using line-by-line coding methods, and I then sorted codes and wrote memos to allow categories to emerge. The intensive line-by-line coding and category construction methods of a grounded theory enabled me to use my knowledge of the case, but also correct for possible researcher bias, allowing the themes and patterns of the processes to emerge out of an effort to deconstruct and reconstruct, based on intensive analysis of the participants' own words.

Once I developed categories, I refined them, by going back to the data, through drawing diagrams and an ongoing iterative process of sorting refining codes, concepts, emerging patterns, and the unfolding story of each Agreement process. Data was organized into temporal sequence and detailed narrative process-oriented account was developed for each case, based on primary and secondary sources, in order to verify the events and descriptions where possible. Interviewees from forest companies, ENGOs and FPAC also reviewed the two full narrative cases to verify that they were factual and authentic to the voices of those interviewed, and I incorporated their written and verbal feedback into the cases.

Research paradigms or theories are "enacted" in the sense that data makes sense within an over-arching ontology, which is enacted through the methods of inquiry, conceptual lenses, and generation of "data". The primary data in my study was interpreted into detailed case study narratives, which was then "interpreted" a second time and further enacted through the four theories I apply to illuminate patterns and meaning. To extract and frame data for each chapter, the unique paradigmatic lenses were applied to analyze the data and case narratives again. This involved application of conceptual lenses from socio-technical transitions, resilience, agency theory, institutional theory and social innovation to generate new insights and link findings with existing theory and concepts. This phase involved creating diagrams, identifying patterns and allowing new meanings to emerge, guided by the conceptual lenses

from the paradigms being applied. Finally, based on the initial theoretical framework and the emergent findings in each chapter, I used a meta-paradigmatic theory-building approach (Lewis and Grimes, 1999) to synthesize the findings regarding patterns of agency across scales, and the comparative case insights about systemic impacts of social innovation. The conclusion contains this meta-theoretical synthesis, and recommended directions for further theory development and research.

Finally, I used several forms of triangulation methods to validate my findings, including methodological triangulation, data triangulation, and multi-paradigm or theoretical triangulation (Patton, 2002). Methodological triangulation involves using different methods to gather data. In addition to the interviews, I reviewed historical documents, media reports, organizational websites and public relations materials, scholarship related to the case, other published materials, and internal documents provided by Rainforest Solutions Project, the CBFA Secretariat, and other signatories. These secondary documents were used to verify the details of the Agreements through perceptions of local and national media, through messages in official communications channels and in other public documents. The data was also triangulated through the inclusion of different sectors and organizations with varying perspectives on the phenomena in question (Patton, 2002). Several interviewees provided written and verbal feedback on the narrative case drafts. In addition, as described above in the section on multi-paradigm research, theoretical triangulation analyzes data through different perspectives and can make analysis more robust and credible by bringing together multiple qualitative interpretations and enabling them to be checked against one another. However, the goal of triangulation is not to arrive at consistent analysis, because inconsistencies revealed through taking multiple perspectives on phenomena can help uncover deeper meaning in the data (Patton, 2002).

Assumptions, Limitations and Scope

My research assumed that the interviewees were qualified and answering truthfully and accurately based on their experience. There were several limitations in the scope of this research. I did not interview anyone outside of the two cases, therefore I have an "insider view" from Agreement signatories, which may privilege the perception that the GBRA and CBFA are innovative and important initiatives. However, I did attempt to source critical perspectives, in particular from First Nations who were not included in the CBFA, and also through media coverage, websites, and public letters. The comparison is also only of two examples, and additional cases would have made my findings more robust. The generalizability of this research may be limited by the fact that the Agreements occurred in a healthy democracy, in a context where social conflict and activism are not a life-threatening choice. This is not the case in many other countries, and so may be fewer transferrable lessons to places with less healthy democratic structures. More comparative research in different social and cultural settings as well as on different kinds of change initiatives are needed to corroborate the findings in this dissertation.

A potential source of bias in my interpretation of the data is that I held past positions with environmental organizations Sierra Club of BC and ForestEthics. I represented the environmental sector at the CCLRMP process in the Great Bear Rainforest. During this time, I was a founding steering committee member of the Markets Initiative, which later became Canopy, one of the signatories to the Canadian Boreal Forest Agreement. Later, with ForestEthics, my role included collaboration with Greenpeace and Rainforest Action Network on international markets campaigns, and coordinating communications, public outreach and advocacy activities in the Great Bear Rainforest campaign. I also took part in strategy development retreats with ForestEthics when the Boreal campaign was being developed. My research and analysis is inevitably influenced by these roles, giving me behind-the-scenes knowledge and personal experience. I attempted to address this bias by triangulation and

conducting line-by-line coding to stay very grounded in the interview data, by sharing the detailed narrative accounts of the cases with multiple research participants and incorporating their feedback, and also through my own self-reflective processes. A final form of potential bias is one that has been noted in the social innovation literature - that of "confirmation bias" whereby research on change emphasizes those cases that are perceived to have been successful. I partially address this through inclusion and comparison of two different cases, although proponents consider both Agreements to be successful.

Dissertation Overview and Summary of Findings

In this chapter I introduced the problem context of complex social-ecological challenges, and the need for transdisciplinary dialogue across the emerging theories of systemic change, including social innovation, resilience, sociotechnical transitions, and neo-institutional theory. My specific purpose is to understand the agency and cross-scale dynamics involved in deliberate efforts to transform social systems towards sustainability, in particular the strategies of civil society actors. This chapter also introduced the multi-paradigm research approach and the research methodology. Chapter 2 contains a multi-paradigm review of social innovation, resilience, sociotechnical transitions and institutional theory, and sets out a general theoretical framework that is used to guide the analysis in subsequent chapters. The framework synthesizes several core lenses from the selected theories of change, in order to examine the phases and cross-scale processes of social change agency more deeply, and to generate criteria for evaluating systemic social innovation. Chapter 3 provides background to the Great Bear Rainforest Agreement (GBRA) and Canadian Boreal Forest Agreement (CBFA) through a brief summary of the case history, and a review of related literature on multi-sector forest governance, global forest certification, and environmentalists' markets campaigns.

Chapters 4 and 5 specifically focus on the *agency* and *change process* involved in advancing the GBRA and CBFA. Chapter 4 introduces the Great Bear Rainforest case, and applies the

lenses of resilience (Gunderson and Holling, 2002), social innovation (Westley and Antadze, 2010) and agency (Bandura, 2001; 2006) to analyze the individual and collective processes of agency that catalyze systems change. The chapter finds social change agency can be understood as a multi-level process of creating intentional change, where actors must attend to transformation at personal, interpersonal, and systemic levels in order to be successful. Six patterns of individual to collective agency were found to be critical during the phase from conflict to innovation in the Great Bear Rainforest negotiations: 1) creating powerful personal narratives; 2) humanizing opponents; 3) tolerating conflict and uncertainty; 4) focusing on solutions; 5) building an inclusive vision; and 6) understanding the dynamics and psychology of change. These six processes of agency demonstrate links between the micro-level processes of individuals, meso-level group interactions, and the macro-systemic context, and show that individual agency and personal transformations gave rise to new relationships and laid the groundwork for system transformation.

Next, in Chapter 5 I apply the multilevel perspective (MLP) from sociotechnical transitions theory (Geels, 2005; Geels and Schot, 2007; Grin et al., 2010) and add agency theory (Bandura, 2001; 2006) to explore sustainability transitions in the Great Bear Rainforest and Canadian Boreal Forest Agreements. The cases of forest conservation in the GBRA and CBFA illustrate how reinforcing local and global strategies changed financial incentive structures for forest companies, and how through mobilizing collective and proxy agency of international marketplace actors, new venues opened up to engage in multi-sector innovation domestically. These distributed strategies worked across niche (micro), regime (meso) and landscape (macro) levels, and had a path-breaking effect on locked-in forest regimes in Canada - illustrating what Grin (2010) calls mutual reinforcement dynamics. At the same time, environmentalists' strategies helped to developed FSC-certification as a non-state global governance platform (Pattberg, 2012) that has legitimized environmentally and socially sustainable forest practices. A further finding suggests the importance of "landscape leverage"

strategies that contradicts the assertion in the MLP that the macro-landscape level is exogenous, and cannot be influenced by deliberate actor strategies.

In Chapter 6, the focus shifts to analyze the *systemic change impacts* of each Agreement, using social innovation (Westley and Antadze, 2010) and institutional lenses (Scott, 1995) to create a framework for evaluating the systemic systemic social innovation as a form of institutional change. The degree of change in the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement is evaluated based on novelty or discontinuity in the following categories: 1) Formal governance: regulations and laws; 2) Informal governance and stakeholder rules; 3) Knowledge, practices and routines; 4) Cultural norms and discourse; and 5) Distribution of power and resources. Based on these dimensions, I found a disparity in the systemic impacts the two Agreements. The GBRA introduced greater systemic change and novelty into the formal and informal rules guiding the dominant forest regime, as well as significant new knowledge and practices in the form of a fundamentally new ecosystem-based forest management paradigm. Finally, with the inclusion of First Nations co-management and $120 million of conservation financing to support sustainable local economic development, cultural norms have shifted, and significant levels of power and resources have shifted away from the dominant regime. In addition, both Agreements have been part of transnational efforts to shift the global supply chain towards more sustainable forest practices and purchasing, which have introduced significant novelty and also had system-wide impacts, although they have not led to discontinuous or transformative change to forest products markets. The Canadian Boreal Forest Agreement has resulted in significant changes in relationships and informal rules between ENGOs and forest companies in Canada, it has not led to changes in the dominant institutional arrangements. Specifically, no formal rules leading to protection of land or caribou have been legally established, forest practices have not substantially changed, and power and resources were not redistributed.

Furthermore, the vision established under the CBFA is of maximizing ecological health and economic prosperity, without challenging the dominant industrial forest paradigm or economic assumptions that benefit large companies and overlook the needs of First Nations and communities. By comparing the processes of the two Agreements, key differences were evident in the dynamics involved in the process that help explain the disparity of outcomes from incremental to more radical change.

The conclusion summarizes the main findings from each research article, and presents a meta-theoretical model of the patterns of agency across scales and phases of innovation that led to transformative changes in the forest regimes studied. Four key patterns of agency are identified: 1) disruptive pattern of agency that provides leverage or seizes opportunity to open up locked-in systems; 2) a visionary-architectural pattern of system redesign; 3) a relational pattern of psycho-cultural change, and 4) the mutually reinforcing pattern of distributed agency. These patterns of agency are interrelated, and the final pattern, mutually reinforcing agency, involves the ability to connect and orchestrate the different forms of individual, collective and proxy agency, across scales and over time in order to sustain pressure for and gain implementation of institutional-systemic changes. Together they suggest a more comprehensive theory for social change agency that highlights how different forms of agency span social structures over time and space and that deliberate, distributed orchestration of agency across scales can bring about systems-level change. Finally, I explore the implications of this research for theory and practice and point to directions for further research.

Chapter 2. Multi-Paradigm Review and Theoretical Framework

Multi-Paradigm Review

Over the last decades, several middle-range theories (or paradigms) have emerged to better encompass and engage with the complexity of social and ecological problems faced by contemporary society. These theories include social innovation (Caulier-Grice et al., 2012; Mulgan, 2007; Westley et al., 2006; Westley and Antadze, 2010), resilience (Gunderson and Holling, 2002; Walker et al., 2006), sociotechnical transitions (Geels, 2005, 2010; Grin et al., 2010; Loorbach and Rotmans, 2006; Rotmans et al., 2001) and neo-institutional theory (DiMaggio, 1983; Maguire and Hardy, 2009; Scott, 1995; Zeitsma and Lawrence, 2010). Each theoretical approach provides dynamic, multi-leveled conceptions of social systems, illuminates the co-constitutive relationships between structure and agency, and describes processes of stability, adaptation, and transformation. Given their similar founding intentions to respond to complex problems, each theoretical community shares commitment to linking research and practice - between natural and social science domains, in the case of resilience, and across disciplinary boundaries, in the case of social innovation, sociotechnical transitions and institutional theory. Each of these transdisciplinary theories foregrounds particular patterns and insights which can contribute to better understanding of transformative change processes, as well as the dynamics which reinforce existing systems.

In this chapter, I review literature from four main focal theories - social innovation, resilience, socio-technical transitions, and institutional theories. I highlight their central frameworks and key concepts regarding change processes and agency, as well as their areas of application. Then I compare and contrast their contributions, overlaps, lacunae, and blind spots. Based on the review and summary, I select conceptual elements best suited to answering my research questions and then distill them into a theoretical framework. This framework synthesizes concepts from across the theories including: definition of the focal

system, description of micro-meso-macro scales and cross-scale interactions; key agency concepts; and a 4-phase process of change. The primary purpose of this research is to contribute knowledge about the dynamics of large-scale and deliberate change, in particular the agency and cross-scale processes involved. The secondary purpose is to advance the transdisciplinary theoretical resources available for tackling wicked social-ecological problems, by using a multi-paradigm research approach. I turn now to a review of the four focal theories.

Social innovation

Social innovation is an applied and integrative field, pointing to an emerging body of theory and practice concerned with public sector, private sector, civil society and philanthropic efforts to solve complex, deep-rooted social problems (Mulgan et al., 2007; BEPA, 2011). The field is pragmatic, practice-oriented, and transdisciplinary: "social innovation transcends sectors, levels of analysis, and methods to discover the processes – the strategies, tactics, and theories of change – that produce lasting impact" (Phills et al., 2008, p.37). A recently synthesized definition of social innovation states:

> *Social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society's capacity to act.* (Caulier-Grice et al., 2012, p.18).

The field of social innovation includes but transcends efforts to develop social enterprises and social entrepreneurship at organizational and inter-organizational levels, encompassing efforts in all sectors to generate transformations in policy, governance and institutions in service of societal needs (see Figure 2). In this multi-level conception, social innovation bridges inter-organizational and institutional scales driven by the intent to create system-wide impacts (Westall, 2007).

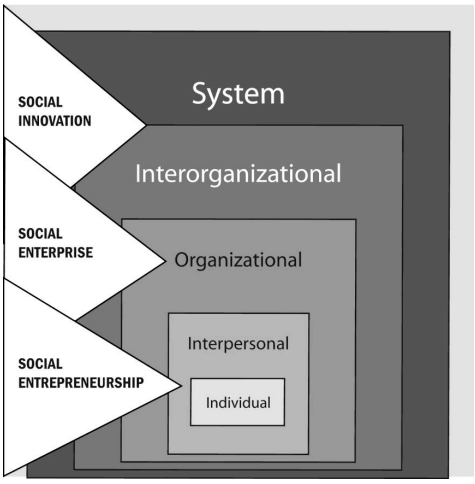

Figure 2. A systemic view of innovation. *Source*: Westley and Antadze, (2010), after Westall, A. (2007) *How can innovation in social enterprise be understood, encouraged and enabled?* A social enterprise think piece for the Office of the Third Sector. Cabinet Office, Office of The Third Sector, UK, November. Available at http://www.eura.org/pdf/westall_news.pdf (accessed 10 October 2008).

Westley and Antadze's (2010) definition of social innovation foregrounds social system and institutional change:

> *"Social innovation is a complex process of introducing new products, processes or programs that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs. Such successful social innovations have durability and broad impact."* (2010, p. 2)

Westley and Antadze (2010) go on to say that social innovations contribute to overall social resilience, and demand a complex interaction between agency and emergent opportunity. Their approach analyzes social innovation as a process of systemic, institutional change. As such, they are interested in the work of institutional entrepreneurs, individuals or networks of people whose role it is to cultivate and connect to opportunities as they seek to change political, economic, legal or cultural institutions to advance social innovation (Dorado, 2005; Westley and Antadze, 2010).

The agency involved in social innovation can be distributed, with roles being played by

different people at different times, where networks play a critical role in enabling actors to span scales and leverage new system-change opportunities (Moore and Westley, 2009). Social innovation emphasizes experimentation and novel recombination, and the complex interplay between emerging opportunity contexts and intentional action that influences the spread of innovations into social systems (Westley and Antadze, 2010). Social innovators look for ways to empower effective inventions to achieve larger impact, through scaling processes. Related to this, Unger (2013) emphasizes the need to *institutionalize* radical experimentalism, and ensure that grassroots efforts have "structural ambition" to fuel the larger political transformations that are necessary to address the widespread social and ecological problems facing contemporary society. One social innovation practice that formalizes this experimentalism is "change labs" or "design labs" (Westley et al, 2012). Labs are designed to facilitate cooperation and the co-creation of meaningful and innovative solutions to complex problems. Conveners of lab processes gather together experts, potential users, and other stakeholders to develop broad and sophisticated systems awareness, create and test social prototypes, and to engage powerful actors to scale up successful innovations. Labs provide a protected physical, cultural and intellectual space removed from the reinforcing institutional pressures that can limit innovation

Resilience

Originating with the work of C.S. "Buzz" Holling (1973, 1995), resilience theory recasts static conceptions of ecosystems into a dynamic view, interweaving insights from evolutionary biology and ecosystem sciences, non-linear and complex adaptive systems theories, adaptive resource management, history, economics and social sciences (Holling, 1995; Gunderson & Holling, 2002). *Resilience* is defined as the capacity of a system to absorb disturbance and reorganize while undergoing change, so as to still retain essentially the same function, structure and feedbacks, and therefore identity (Folke et al., 2010). Resilience approaches focus on *linked social-ecological systems*, especially from the perspective of managing and sustaining

the many values inherent in ecosystems. The resilience of a system is determined by three important characteristics: the capacity of the system to experience a disturbance or change and still retain its basic function, structure, and identity; the ability to self-organize; and the ability to increase its capacity to learn and adapt (Gunderson and Holling 2002; Walker and Salt 2006; Jansen et al. 2007).

Two macro-structures described by resilience theory are a shifting, *non-linear stability landscape,* which describes the totality of the possible states of a social-ecological system (Folke et al., 2010), and a *panarchy*, depicted in Figure 3, the structure of nested sets of adaptive cycles across time and space, within which system characteristics change and persist (Gunderson and Holling, 2002). The adaptive cycle is the primary process model within resilience theory, and refers to a continuous cycle of both incremental and transformative change in four phases (Holling and Gunderson, 2002, Folke et al., 2010): the foreloop process is of stable and incremental change, from the *exploitation phase* (r) where resources are freely available and resilience is high, enabling emergence and rapid growth. Over time, the system locks up human and physical resources, entering the *conservation phase* (K) - a mature system resistant to change. Eventually, systems become brittle and face the collapse of structures or processes in the *release phase* (Ω) – a "creative destruction" that is influenced by unpredictable changes happening at larger or smaller spatial-organizational-temporal scales. This "backloop" trajectory of turbulent change is a time when reorganization and invention occur and transformation to another system identity is possible. Connections between existing systems parts are dissolved, dominant forms of organization are disrupted, and novelty or innovation may emerge. Cross-scale influences from other levels of human organization or ecosystems are also felt more strongly and may shape the emerging identity of a system (Walker and Salt, 2006). In the *reorganization phase* (α) that follows release, a process of exploration and renewal occurs, enabling growth and recombination that may involve either adaptive (incremental) or

transformative changes to the social-ecological system in question (Walker et al., 2004).

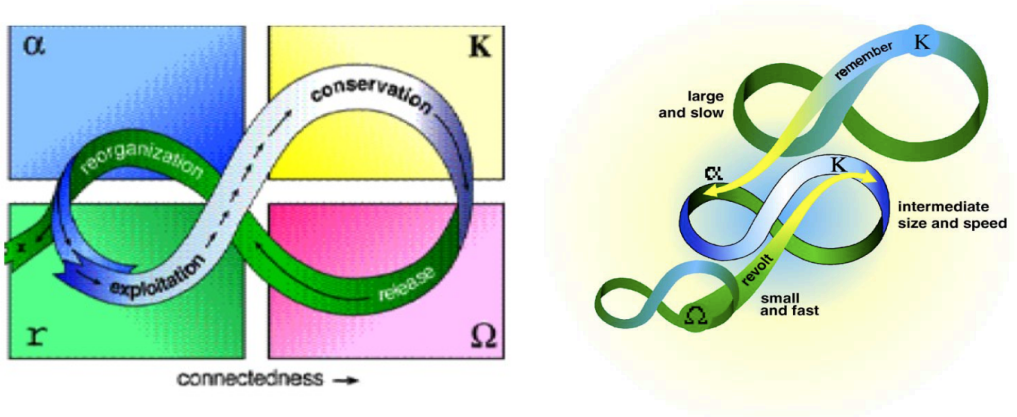

Figure 3. The Adaptive Cycle and a Multi-scaled Panarchy. Adapted from Holling, C. S. and L. H. Gunderson 2002. In *Panarchy: Understanding Transformation in Human and Ecological Systems*, Washington, D.C.: Island Press, pp. 25–62.

Resilience researchers study co-emergent dynamics between cultural, political, social, economic, ecological and technological domains, at scales from the individual to the global (Holling and Gunderson, 2002; Berkes et al., 2003; Walker et. al, 2006). Managing for resilience aims to reduce the vulnerability of a social-ecological system to collapse or rapid changes in productivity or ecosystem services. Recently, more attention has been paid to the maladaptive resilience of damaging systems, resulting in an acknowledgement by resilience researchers of the importance of *transformability* as a companion concept to resilience (Folke et al., 2010), where systems require reconfiguration of the values, structures, and processes guiding them. *Transformation* in social-ecological systems is defined as a change in the nature of the stability landscape, introducing new defining state variables and losing others (Walker et al. 2004).

Transformative capacity also depends on a system or person's ability to draw on scales transcending their own (Gunderson and Holling, 2002). Navigating transformation necessitates people to undergo deeper learning, which is supported by the engagement of multiple stakeholders embodying different perspectives in the system (Gunderson & Holling, 2002). Human agency plays a key role in transformative change because human consciousness can traverse many spatial, temporal and organizational scales of systems. Reflexivity and

consciousness allow humans to change the institutional rules that social patterns organize around (Westley et al, 2002). When actors understand adaptive cycles and cross-scale interactions, points where the system can accept positive change may be identified and used as leverage points to increase resilience, sustainability or systems transformation (Olsson et al., 2009, Westley and Antadze, 2010). More radical innovations or transformative systems changes can be introduced during back-loop phases when new combinations of ideas, products or processes can disrupt institutions, and from novelty that develops at smaller scales (Walker et al. 2004; Westley and Antadze, 2010; Biggs et al., 2010).

Socio-Technical Transitions Theory

Socio-technical transitions theory (STT) is focused on understanding trajectories of historical socio-economic development and more recently, practical interventions to re-orient systems towards sustainable pathways. Researchers draw on science and technology studies/innovation studies, evolutionary economics, complex adaptive systems, integrated assessment, neo-institutional theory, historical analysis, globalization studies, reflexive modernization, social construction of technology, and Giddens' (1984) structuration theory (Grin et. al, 2010). Sociotechnical transitions theory includes various strands, including transition management (Loorbach and Rotmans, 2006; Rotmans et al., 2001), system innovation (Elzen et al., 2004; Markand and Truffer, 2008), and the multi-level perspective (MLP) (Geels, 2005; Rip and Kemp, 1998; Schot, 1998;).

Sociotechnical systems are defined as clusters of elements including technology, regulations, user practices and markets, cultural meanings, infrastructure, and supply networks. The transitions approach connects to larger sustainability discourses by addressing how to break technological and social "lock-in" of these systems, or regimes, and speed the uptake of sustainable innovations into society. *Transitions* are defined as transformation processes in which society or a complex subsystem of society changes in a fundamental way over an

extended period (more than one generation) (Kemp and Rotmans, 2004, p.138). The recent strand of *sustainability transitions* is focused on understanding socio-technical systems development and practical interventions to re-orient systems towards sustainable pathways, with technology as the focal point for organizing transition efforts (Geels, 2010).

According to the theory, sociotechnical systems transform through dynamic processes of emergence, self-organization, and co-evolutionary adaptation. Co-evolution involves irreversible patterns of change caused by interactions between economic, cultural, technological and institutional subsystems (Grin et al., 2010). Natural science conceptions of evolution are augmented with social adaptation mechanisms including variation in beliefs and visions of intentional actors, novelty generation through bricolage (assembling existing elements in new ways); selection through enabling or constraining political and cultural requirements; negotiation; and retention via interpretation, contestation, codification or institutionalization (Geels & Schot, 2010).

The multi-level perspective (MLP) frames transition processes as interactions between innovative micro-practices (*niche* experiments), meso-level structures (a given socio-technical *regime* - framed through an institutional and social constructivist lens), and long-term, macro-level exogenous trends that influence the regime (the socio-technical *landscape*) (Geels, 2002, 2005; Rip & Kemp, 1998; Schot, 1998). The MLP depicts a holarchy (see Figure 3) showing these three functional and temporal levels – macro-processes are slower (and more structured), meso-processes are faster (and less structured), and niche-processes are fastest (least structured). Niches generate agency, new norms and practices, and radical innovations, and experience influence from incumbent regimes (Rotmans et al. 2001; Geels, 2005). The landscape provides the broader macro-structural context for niche–regime interactions, and includes social values, policy beliefs, worldviews, political coalitions, the built environment, prices and costs, trade patterns and ecological influences (Kemp & Rotmans, 2004). Landscape processes,

political or otherwise, bear down on regimes through interpretation by actors (Geels & Schot, 2007), generating stress and creating opportunities.

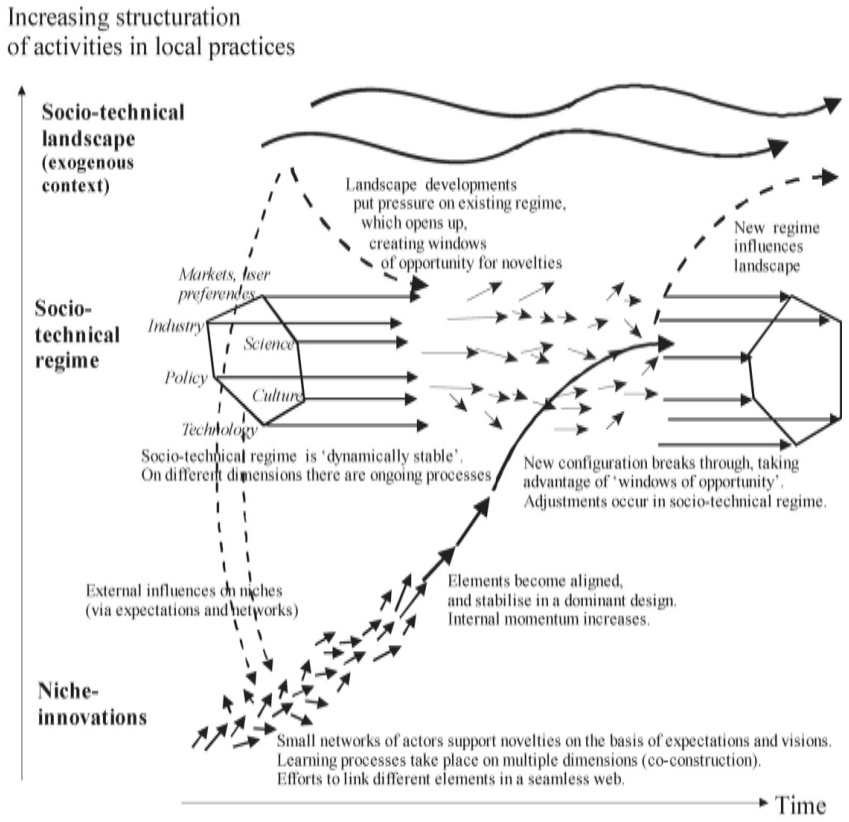

Figure 4. The Multilevel perspective on transitions (MLP). Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research policy*, *36*(3), 399-417.

Transition processes are driven by the creation of novel niche practices, which require protection to develop, and emergent opportunities to disrupt or become adopted into regimes. Systemic or regime change results from multi-level interactions between the landscape, regime and niche level, along various patterns and pathways of interaction (Geels and Schot, 2007; Smith and Stirling, 2010). Regardless of the specific transition pathway, niches are key to nurturing radical innovation (Rip & Kemp, 1998). Geels and Schot (2010) synthesize key processes for successful niche development:

1) articulation of clear expectations and visions to direct learning, attract attention and legitimate niche protection;

2) building diverse and deep social networks for constituency and resources; and

3) multi-dimensional learning processes emphasizing second-order systemic learning. Such multi-stakeholder niche-level transition experiments are crucial for the creation of institutional openings to adopt new practices or catalyze regime transitions. In addition to creating protected niches, strategic actors must take advantage of windows of opportunity (Geels & Schot, 2010) and navigate cross-scale, multi-level and path-dependent dynamics in order to cultivate and catalyze transitions (Grin, 2010; Rotmans & Loorbach, 2010).

The relationship between structure and agency is central to socio-technical transitions theory, and theorists draw on constructivist approaches from Giddens (1984) (e.g. Geels & Schot, 2007; Grin et al., 2010). Giddens' structuration theory argues that structures (rules and resources) are sustained and recreated through agents' routines (practical consciousness) and reflexivity (discursive consciousness), and "the structural properties of social systems are both medium and outcome of the practices they recursively organize" (1984, p. 25). Systems and institutions do not exist independently, but are continually re-enacted, which both constrains and enables further action. This "duality of structure" implies that structural change requires actors to critically scrutinize and reformulate their conduct in light of intended and unintended consequences (Giddens' *reflexive monitoring*) (Grin, 2010). This can lead to *re-structuration*, a co-evolution of mutually reinforcing novel practices (niche experiments) and structural changes (regime changes) towards sustainable development, amidst landscape turbulence (Grin, 2010, p. 265).

Institutional theory

The notion of institution is used widely in disciplines of economics, sociology, political science, global governance, organizational management, and beyond (DiMaggio and Powell, 1983; Scott, 1995). *Institutions* refer to culturally embedded understandings that explain and justify social arrangements and behaviors - the rules, norms and beliefs that describe reality for

an organization or wider social system, explaining what can be acted upon and what cannot (Garud et al., 2007; Hoffman, 1999). Scott (1995) describes the 3 pillars of institutions: the regulative, which guides action through coercion and threat of formal sanction; the normative, which guides action through cultural norms of acceptability, morality and ethics; and the cognitive, which guides action through the very categories and frames by which actors know and interpret their world. Change in institutions is constrained by their enmeshment in mutually reinforcing systems of practices, interests, and ideas (Greenwood & Hinings, 1996). This is referred to as institutional "lock-in", which means for institutional change to occur, old institutions must be disrupted or de-institutionalized before new or adapted ones can be re-institutionalized (Tolbert and Zucker, 1999).

Neo-institutional theorists (Powell and DiMaggio, 1995) use discursive and constructionist approaches to describe changes in the symbolic boundaries of institutions, and analyze how political and social movement struggles shape meaning, mobilize resources, and confer new legitimacy in efforts to change institutions (Granovetter & McGuire, 1998; Garud & Karnoe, 2001; Lounsbury et al., 2003). An *organizational field* is a dynamic frame that enables analysis of common arenas of actors in sectors such as government, trade associations, non-profits, firms, and economic institutions (DiMaggio and Powell, 1983; Scott, 1995). Organizational fields are "bounded" by their dominant institutional meanings that are reproduced and challenged by actor practices within the field (Zeitsma and Lawrence, 2010). An organizational field contains actors with congruent and divergent purposes, perspectives and values who coalesce around the same issue. The study of change in organizational fields analyzes the struggles to frame and reframe institutional meanings, and the strategies of actors wielding different amounts of power (Hoffman, 1999).

Institutional theorists understand the agency of actors involved in institutional change in several ways. Much work focuses on the notion of embedded agency, to account for how

institutional actors are able to create change within the constraints of institutions, emphasizing the paradoxically inter-dependent role of actors and institutions, who simultaneously re-enact, change, and are constrained by institutions (Battilana, 2006; Emirbayer and Mische, 1998; Garud, Hardy and Maguire, 2007; Green, Li and Nohria, 2009; Greenwood and Suddaby, 2006; Seo and Creed, 2002). The concept of *institutional entrepreneur* describes individuals who work to embed innovation into social structures (DiMaggio, 1998). Institutional entrepreneurs are "actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones" (Maguire et al., 2004, p. 657). Institutional entrepreneurs have an ability to work within complex institutional contexts to navigate opportunities, frame solutions through new discourse, create political coalitions, and connect innovative practices to windows of opportunity by being attuned to cross-scale interactions (Battilana et al., 2009; Dacin, Goodstein and Scott, 2002; Dorado, 2005). Looking specifically at the agency of activists, Van Wijk et al. (2014) distinguish three main pathways by which they can affect organizational fields: through conflict, through the creation of new market opportunities and by taking a collaborative approach to affect institutions from within.

Additional institutional approaches to agency look at the "institutional work" involved in creating, maintaining and disrupting institutions (DiMaggio, 1988; Oliver, 1991; Dacin et al., 2002; Lawrence and Suddaby, 2006). One distinction emphasized by institutional scholars is related to institutional boundaries, and the location of actors with respect to them - outside, central or peripheral. Zeitsma and Lawrence (2010) explore how outsiders gain the legitimacy and knowledge to influence a field's practices, and how central players become motivated to make change. Zeitsma and Lawrence (2010) analyze the relationship between actor strategies and cycles of change, to understand how stable organizational fields move into phases of social conflict where outsiders work to undermine institutional legitimacy, and into to periods of innovation where the work of institutional entrepreneurs may be privileged (Zietsma and Lawrence, 2010, p. 215-16). They describe how patterns of institutional change and stability

depend on the combination of field boundaries and practices, and the presence of actors who are capable of navigating, renegotiating and recreating these boundaries and practices (Zietsma & Lawrence, 2010). As boundaries are breached, organizational fields become more open to activist influence, a condition described as a political opportunity structure (McAdam, 1996; Tarrow, 1998) or an industry opportunity structure (Schurman, 2004; Den Hond & Bakker, 2007).

Discussion of theoretical linkages and gaps

Each of the four theories summarized above have unique conditions of emergence and theoretical antecedents, as well as different systems of concern. Yet, they are complementary because they share interests in understanding the *process* of change, and draw on several common source paradigms - in particular evolutionary systems and institutional-constructivist approaches. Because of their emphasis on change processes their methods of inquiry also commonly apply case-based and narrative accounts. Table 1 synthesizes some of the key concepts in each theory. Below I describe existing theoretical linkages, as well as how the theories converge and differ regarding key approaches including their 1) system of concern; 2) multi-scaled structures; and 3) change processes. Finally, I discuss some key lacunae and blind spots of the theories, connecting this to my research agenda.

Theoretical Interactions

There is increasing interaction between theories in the literature. Key concepts from resilience have been adapted into social innovation theory (Moore and Westley, 2009; Westley et al., 2006), in order to re-conceptualize innovation within a broader social-ecological resilience framework, highlighting how different roles can be most effective during different phases of the adaptive cycle, and how windows of opportunity for scaling up novelty can emerge during cyclical changes at higher and lower scales of a social system (Westley & Antadze, 2010). The recent surge of interest and investment in social innovation in the

European Union (BEPA, 2011; Caulier-Grice et al., 2012) has caused scholars from many different disciplinary backgrounds and shared interest in social change, innovation, and complex problem domains to being cross-pollinating the literature (e.g. Haxeltine et al., 2013, Caibaj-Santana, 2013). Dialogue is also budding between resilience and socio-technical transitions researchers, who identify synergies and shared challenges (van der Brugge & Van Raak 2007; Foxon et al. 2008; Westley et al., 2013), particularly in governance applications (Smith and Sterling, 2008; 2010).

Systems of concern

The system of concern in each theoretical community differs significantly. The field of social innovation has contributed practical research on public, private sector, civil society and philanthropic collaborations to foster innovative systems change and distilled lessons on scaling up change using markets forces and social financial instruments (e.g. Mulgan, 2007). The system of concern in social innovation varies depending on the innovation in question, and can range from the neighborhood level, where people are addressing poverty or social exclusion with a new service to efforts to shift cultural discourse and perceptions of people with disabilities nationally or internationally (Westley et al., 2006). In general, social innovation is a much more practice-focused paradigm than the other three profiled here, which is why a multi-paradigm approach can help expand the conceptual resources available for theorizing systemic social innovation.

The systems of concern for resilience scholars are ecosystems and the governance and social domains that interact with them - at the local, regional, landscape and even global level (Resilience Alliance, 2007). Resilience theorists have reframed ecosystem management as a cross-scale practice, and their analyses of interacting domains across spatial and governance scales make important theoretical and practical contribution to the field of resource and ecosystem management. However, resilience approaches emphasize analysis of the structure

and function of ecosystems, and complement this by "grafting on" social accounts. Ontological and epistemological differences between natural and social science are never bridged theoretically. Resilience theorists use naturalistic or revelatory language to describe social-ecological systems, which can obscure their social construction (Law, 2004), although there are many exceptions to this (e.g. Berkes et al., 2003, Westley et al., 2002, Janssen, 2002).

	Social Innovation	**Resilience**	**Sociotechnical Transitions**	**Institutional Theory**
Influential Disciplines	Strategy and management, innovation studies, social movement theory, complex adaptive systems	Complex adaptive systems, ecosystem-based management, evolutionary biology	Evolutionary economics, history of technology, innovation studies, constructivism structuration theory	Constructivism, organizational and management theory, social movement theory, sociology
System of Concern	Innovations in social systems	Linked social-ecological systems and their governance	Sociotechnical systems: new technology interacting with practice, markets, politics	Institutions and organizational fields, discourse of actors
Structure and scale of system	Geographical-spatial and institutional, cultural and governance scales	Panarchy and nested adaptive cycles; ecological-spatial scales, stability landscape	Multi-level perspective: micro-meso-macro scales, in a socially constructed stability landscape	Discursively constructed levels: individual, sub-organizational, organizational, societal levels, organizational fields
Change process	Multiple models: adaptive cycle; S-curve; scaling innovations that emerge locally, multi-sector, labs	Cross-scale interactions, phases of adaptive change, novelty from smaller scales, diverse stakeholder learning	"Restructuration"; MLP: landscape, regime, niche interactions; novelty from niche level and landscape disruption creates regime openings	Multiple models: 4-phased institutional change, change in 3 pillars; political opportunity structures
Forms of effective Agency	Institutional entrepreneurship, multi-stakeholder collaboration, resource brokering	Ecological governance, Stakeholder learning & collaboration, Attunement to opportunity	Agency in niches and attunement to wider dynamics and opportunity Multi-stakeholder learning	Institutional entrepreneurship Boundary and practice work Discursive struggles

Table 1. Summary of theoretical aspects of social innovation, resilience, sociotechnical transitions and institutional theory.

Sociotechnical transitions research takes technological innovation, and the broader sociotechnical regime as its system of concern, which includes interacting markets, regulations, political and cultural forces, investment, and infrastructure (Smith et al., 2010). According to Geels and Schot (2007), sociotechnical regimes are synonymous with organizational fields in institutional theory. Organizational fields refer to common arenas of actors from differing

sectors, including government, trade associations, non-profits, firms and economic institutions (DiMaggio and Powell, 1983). The emerging sub-field of sustainability transitions focuses inquiry on change processes in particular sectors of society such as energy, transportation, water, or food systems, which may have a technological focus but also address wider environmental concerns and political dimensions of transitions (Geels, 2010).

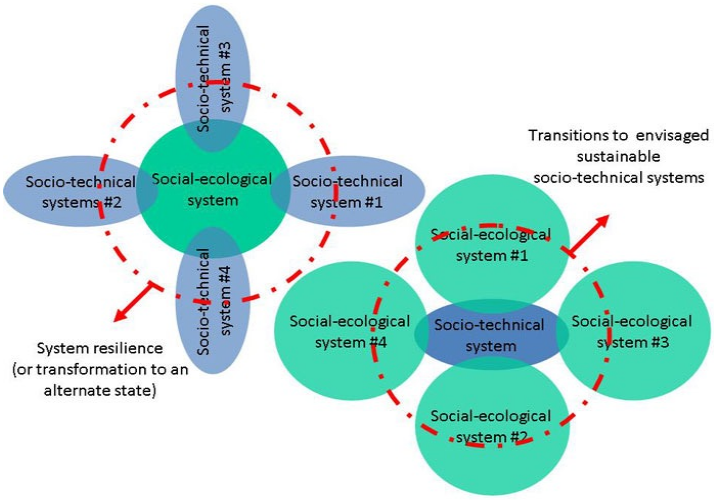

Figure 5. Interactions between socio-technical systems and social-ecological systems. Source: Smith and Sterling, The Politics of Social-ecological Resilience and Sustainable Sociotechnical Transitions, 2010.

Figure 5, above, illustrates how various socio-technical regimes (or organizational fields) interact with different patchworks of social-ecological systems - illustrating the difference in their systems of concern. Resilience researchers aim to govern linked social-ecological systems to sustain their resilience (or anticipate and support their transformation to an alternative state). Several sociotechnical regimes interact with a given social-ecological system, for example, through resource extraction, service consumption, and waste assimilation (Smith and Sterling, 2010). Conversely, when sociotechnical regimes are the focal system, their transition to sustainability could impact multiple social-ecological systems in different regions.

The focal system in institutional theory is social structure, or the three pillars of institutions, which refer to the regulative, normative and cognitive dimensions of social systems (Scott,

1995). Institutional analysis can be applied to any system of concern at a meso- or macro-level, which in part explains why scholars in many fields have adopted it as a lens for understanding interactions of cultural and structural change processes. Social innovation, resilience, and sociotechnical transitions approaches have imported concepts from institutional theory to gain insight into institutional change dynamics, particularly the role of discursive and normative struggle, and the agency of institutional entrepreneurs (e.g. Biggs et al., 2010; Elzen et al., 2011; Geels and Verhees, 2011; Gunderson & Holling, 2002; Smith & Raven, 2012; Westley & Antadze, 2010). Institutional scholars Garud, Kumaraswamy & Karnoe (2010), point out that defining what is 'endogenous' or 'exogenous' to a system involves actor perspectives and is socially constructed. In their institutional path creation perspective, they describe how actors define system boundaries differently, arguing that what to one actor may be considered an exogenous shock may have been cultivated deliberately by other actors who defined or engaged with the system differently. They further observe that when groups of people seek to shift entrenched patterns, they must 'endogenize' aspects of the system they wish to transform, in order to have influence (Garud et al., 2010). The path creation perspective suggests that boundaries of systems, and therefore systems-change agency, are co-constituted and changeable, based in part on the complexity-awareness, self-reflectivity and other meta-cognitive capacities of actors.

Multi-scaled structures

While resilience, social innovation and sociotechnical transitions and the MLP contain multi-level frameworks (or holarchies), their 'levels' do not refer to aspects of the same phenomena. Sociotechnical transitions theory draws heavily on interpretive/constructivist approaches (Grin et al., 2010; Geels, 2009, 2010), emphasizing co-evolutionary change processes that occur both through social-evolutionary selection mechanisms and structuration process (Giddens, 1984). The levels in sociotechnical systems are not spatial or geographical.

Rather, the levels signify increasing degrees of institutional structuration and stability between actors, structures and practices (Geels & Schot, 2010). The micro (niche) level is portrayed as having stronger forces of agency, restructuration can more readily occur, with the meso (regime) level being more structured and less influenced by individual agency, and the macro (landscape) level being outside of the influence direct agency. Therefore, the multilevel perspective on transitions (MLP) shown in Figure 4 can be understood as a structuration holarchy, made up of nested structures of legitimation (rules), domination (resource and authority allocation) and signification (interpretation and meaning) which become more resistant to change at higher scales of organization (Giddens, 1979).

Conversely, resilience theorists analyze both objective *geographical holarchies* that describe interacting climatological, bio-physical and other variables across spatial scales and *governance holarchies* that describe relational (and socially constructed) systems of rules and authority. Governance holarchies also tend to exist along a spatial scale, spanning from local to regional to national, to supra-regional to international/global (Gunderson and Holling, 2002), however this is a different kind of scale than the "levels of structuration" shown in the MLP. Figure 2 illustrates a governance/organizational holarchy from a social innovation perspective, which extends from the level of the individual, to the organizational to the social system, locating entrepreneurial activities. However, in social innovation literature, distinctions are rarely made between governance scales, institutional scales, or ecological-spatial scales - perhaps most surprisingly even in the literature about scaling social innovations. Lastly, institutional theory places far less emphasis on cross-scale analysis than the other three approaches described here, but its concepts have been applied to systems at different levels of social organization, from the individual, organizational subsystem, organization, organizational population, organizational field, and society (DiMaggio and Powell, 1983). However, the lack of explicit cross-scale frameworks may obscure important interactions taking place between phenomena at smaller and larger scales that are impacting a given organizational field,

including patterns of discourse, rule changes, and normative or values change. Recently, institutional theorists are showing greater interest in multi-level interactions (see Bitektine and Haack, 2014; Gray, Purdy and Ansari, 2015).

Change processes

Cross-scale dynamics and novelty

Social innovation approaches are inherently concerned with scale as a differentiating factor between what is simply a localized "invention" and what is diffused or scaled as an innovation. The resilience-oriented sub-strand of social innovation theory that informs this dissertation (Westley and Antadze, 2010) directly draws on the cross-scale insights from resilience theory to distinguish between geographic "scaling out", and "scaling up" initiatives to affect higher scales of social rules, beliefs, norms and laws (Westley et al., 2014). Other theoretical strands within social innovation lack such a nuanced conceptual model for understanding cross-scale dynamics and the inclusion and scaling of novelty - drawing mainly on simple diffusion models of change.

Resilience theory emphasizes ecological-evolutionary mechanisms and variables operating at different speeds and spatial scales that are explicitly geographical, not institutional or socially constructed (Gunderson & Holling, 2002). In both sociotechnical transitions and resilience theories, large and slow variables can have tremendous influence, as can smaller, faster cycles or niches – catalyzing cascading change across different systems levels. Sociotechnical transitions, social innovation and resilience approaches show strong convergence regarding the novelty-creating role of smaller sub-systems (niches) and their role in destabilizing larger systems. Zeitsma and Lawrence (2010), from an institutional theory perspective, also developed an unrelated 4-phase model of institutional change that emphasizes the importance of "solution spaces" protected from the wider pressures of

institutional discipline in order to move from a phase of institutional conflict to institutional innovation.

Resilience, transition management, and social innovation approaches also converge in their emphasis of the importance of learning during innovation and adaptive governance processes, with a "learn-by-doing and doing-by-learning" experimentation approach in transition management (Loorbach, 2007) and emphasis on "safe-fail" experimentation in resilience applications (Resilience Alliance, 2007). Further interaction could enrich each theory – for example by testing application of transition management approaches to the scaling challenges of social innovation niches, or analyzing the institutional and discursive work actors pursue to advance sustainability transitions.

Incremental and transformative change

Each theory described above contributes concepts for understanding the difference between adaptive/incremental change, where the identity of the system, person or culture stays the same, and transformative change, where identity is transformed according to new organizing principles, values or system variables. However, perhaps because of their focus on the process of change, there are still theoretical gaps for describing and evaluating the impacts of change, be they in disrupted and reorganized institutions (Zietsma and Lawrence, 2010), transformed social-ecological systems (Folke et al., 2010), or social systems where innovation has taken place. In clarifying concepts within the multilevel perspective on sociotechnical transitions, Geels and Schot (2007) recognize that the empirical level of the object of analysis must be specified, in order to evaluate whether transformative change has taken place. They give the example of the electricity regime, which could be studied at the level of primary fuel (coal, oil, gas) or at the level of the entire production, distribution and consumption system, observing that what might appear to be a transformative regime shift at one level could be interpreted as an incremental change in inputs for a wider regime located at higher level (Geels and Schot,

2007). This example underscores the challenge of evaluating incremental or transformative change in complex multi-level systems. Despite this difficulty, when the goal of research is to understand and find solutions to social-ecological problems, new evaluative measures of transformative change in social systems are needed, capable of capturing some of these complexities without flattening or reducing them. I address this knowledge gap in Chapter 6 by proposing an evaluation framework for assessing outcomes of social innovation by looking at their impacts on institutions - both incremental and transformative.

Blind spots and lacunae

Social innovation is a fledgling field of research and practice, having gained most of its momentum over the last decade. It may not even be accurate to call it a "theory" or even a coherent approach, because of its relative youth. However, to the extent that a community with shared definitions is emerging - social innovation has been largely oriented towards market-based innovation approaches to solving social needs. This results in lack of critical assessment of the role capitalism has played creating social problems in the first place. Furthermore, social innovation theorists and practitioners pay scant attention to the linked social-ecological nature of the world's most daunting problems such as overconsumption, vulnerability to climate change, energy transitions, or loss of ecosystems and species.

Conversely, resilience approaches emphasize the study and management of ecological systems and could benefit from *more* analysis of the social-economic and cultural dimensions of systems - the linked institutions, politics, and technological-economic patterns of consumption that interact with ecosystems, in particular that span supply chains and industries. More analysis of institutions could enable the powerful conceptual frameworks from resilience to consider larger-scale and maladaptive social patterns. For example, beyond looking at the management of regional ecosystems nested in larger ecological dynamics, they could look more consistently at crosscutting social and institutional patterns that affect

management of multiple systems, such as policies, consumer behavior, cultural values and discourse. It points to further synergies between sociotechnical and resilience approaches, in particular those focused on sustainability transitions and the transformation of maladaptive resilient systems.

Sociotechnical transitions theory has several blind spots and gaps that may act as obstacles to theorizing more broadly about innovation, sustainability and transformative change. First is the over-emphasis on technology as the main driver of innovation, which originates from its historical roots in technology studies, yet acts as a limitation when theorizing more broadly about the myriad political, social, cultural, and economic dimensions of change. Furthermore, sociotechnical transitions theory and the MLP provide few tools for analyzing large-scale (landscape-level) interactions, and from a resilience-based perspective, may fall into attempts to 'engineer resilience' (Folke et. al, 2010) by focusing on manipulating only fast, local variables (i.e. strategic niche management) - the result of which can be to overlook larger, slower cycles as sites for emergent opportunity and strategic intervention. The transition management approach has been criticized for failing to address politics and assuming managerial governance, which also constrains its potential strategic impacts, especially where there are forces aligned against transition - such as in the low-carbon transition (Smith & Sterling, 2007, 2010; Scrase & Smith, 2009). This criticism is echoed by resilience theorists, who note that while resilience and sociotechnical transitions share a governance approach emphasizing experimentation, a transition management approach determines the new goal and adopts a particular process for reaching it, whereas a resilience approach would allow the new identity of the system to emerge through self-organizing cross-scale interactions and stakeholder learning (Folke et al., 2010).

A related blind spot in sociotechnical theory is its definition of the landscape level in the MLP as "exogenous" - meaning it is conceived as being beyond the deliberate influence of

actors. This definition may originate from evolutionary economics, yet designating aspects of a social system as exogenous conflicts with the constructivist ontology of sociotechnical transitions theory, which describes continuous co-structuring dynamics between agency and social systems at every level, and over time (e.g. Giddens, 1984). This blind spot in the MLP constrains theorizing on how actor strategies may deliberately create influences across scales over long time periods - yet this is precisely the kind of action called for to respond to the sustainability crisis and other complex social challenges in contemporary society. Chapter 5 addresses this theoretical limitation directly, and provides evidence of deliberate co-structuration of macro-scale social trends at the landscape level.

Theorists in sociotechnical transitions, resilience, social innovation and institutional theory are all influenced by Giddens (1984) (e.g. Grin et al., 2010; Geels and Schot, 2007; Westley and Antadze, 2010; Westley et al., 2002; Zeitsma and Lawrence, 2010). While Gidden's theory of structuration provides a "global" view of patterns of agency and various actor roles across institutional scales, it does not fully address the "local" view of individual psychology, personal transformations in values and perspective, and the impact of these micro-dynamics on relational interactions and broader social systems structuration. For example, existing literature on institutional entrepreneurs describes but their outward behavior and roles (Battilana et al., 2009; Dorado, 2005; Maguire et al., 2004), not the internal experience or transformative changes that individuals may have gone through in order to learn their roles, or the new relational and meaning-making patterns they co-create. Likewise, changes in discourse and actor strategies may be analyzed using institutional and agency-based approaches (e.g. Maguire and Hardy, 2009; Zeitsma and Lawrence, 2010) without illuminating the individual or shared psychological meanings and processes that underlie discursive or normative change in institutions (for an exception, see Gray, Purdy and Ansari, 2015). Resilience theory also lacks robust concepts for psycho-cultural patterns of adaptation and transformation, in particular at individual and relational levels. Lack of conceptual resources

for understanding the role of subjective and intersubjective (relational) change hampers cross-scale theorizing in each of the theories profiled above, particularly when there are conflicting worldviews and significant realignment is required in the discourse, values and cultural-psychological identities in a given focal system. To address this lacuna in my research, I draw on the socio-cognitive agency theory of Bandura (2001, 2006), in Chapter 4 where I apply concepts of individual and collective agency to look at the micro and relational dynamics involved in conflict negotiations in the Great Bear Rainforest.

To summarize, the integrative theories above include conceptual resources for understanding systems through different lenses, including: spatial-ecological systems, governance systems, and institutional systems across scales, interactions leading to the emergence of novelty and opportunity in different domains; and role of strategic agency of individuals and groups in catalyzing disruption and generating innovative new forms of institutions. Each theory has a unique system of concern, yet there is theoretical convergence regarding the importance of interactions across scales and different domains, in their adoption of structuration and institutional theories, and in their attention to processes of phased change. To gain greater insight into complex and spatially distributed sustainability challenges, the ecosystem management focus from resilience could be complemented by the focus on technological, market, political, cultural and industrial systems that are the forte of institutional theory and sociotechnical transitions. Greater theoretical integration between these complementary systems could yield new perspectives and opportunities for addressing unsustainable systems of extraction, production and consumption - although this is beyond the scope of my research. Finally, there are theoretical gaps regarding the micro-dynamics of agency involved in psychological transformation and relational change, which may have important implications for understanding cross-scale dynamics in systems change. And, while each theory illuminates unique insights about the role of strategic actors in their system of concern, these insights have not been connected or synthesized across theories until now.

Below, I summarize the key theoretical elements that will be applied to answer my research questions and investigate the processes of cross-scale agency in advancing the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreements.

Theoretical Framework

The middle-range theories reviewed above do not differ radically in their ontological assumptions. Theorists in each community seek to understand change in systems that are complex, locked in and nested by applying constructivist, co-evolutionary models to analyze interactions between social structure and deliberate agency. Each theory is also a synthesis itself, drawing from many other disciplinary and paradigmatic lenses. However, they each bring their strengths and limitations, so by viewing my research cases through these different lenses, a more holistic and multi-faceted picture of the data will be revealed. Below, I build on the conceptual lenses and insights distilled from the multi-paradigm review to provide an orienting theoretical framework that explains the focus of subsequent chapters, and into which I will integrate findings from each chapter to generate meta-theoretical insights about the nature of agency and cross-scale processes involved in the cases of two Canadian forest conservation agreements. My theoretical framework addresses four aspects of my research: definition of the focal system, multi-level structure and cross-scale dynamics, agency and actor strategies, and the process and phases of change.

Defining "the focal system" - Forest regimes at different scales

In order to analyze whether transformative change has taken place, the empirical level of the research subject must be specified (Geels and Schot, 2007). The focal system of my research is forestry regimes, or the organizational fields associated with the two case study regions - in the Great Bear Rainforest and the Canadian Boreal forest. Regimes can be considered to be generally synonymous with organizational fields (DiMaggio and Powell,

1983; Geels and Schot, 2007), and for the purposes of my cases, include the following aspects: established structures of decision-making and resource allocation in the forest industry; dominant technologies and infrastructures; shared knowledge processes and principles; markets and consumption practices; public policies and political power of regime actors - including those in government, First Nations, industry, and civil society; and the cultural/symbolic significance attached to the regime (Smith and Raven, 2012). Figure 6 illustrates the different scales of these forest agreements and also shows the international forest regime at the highest scale, which influences lower scales.

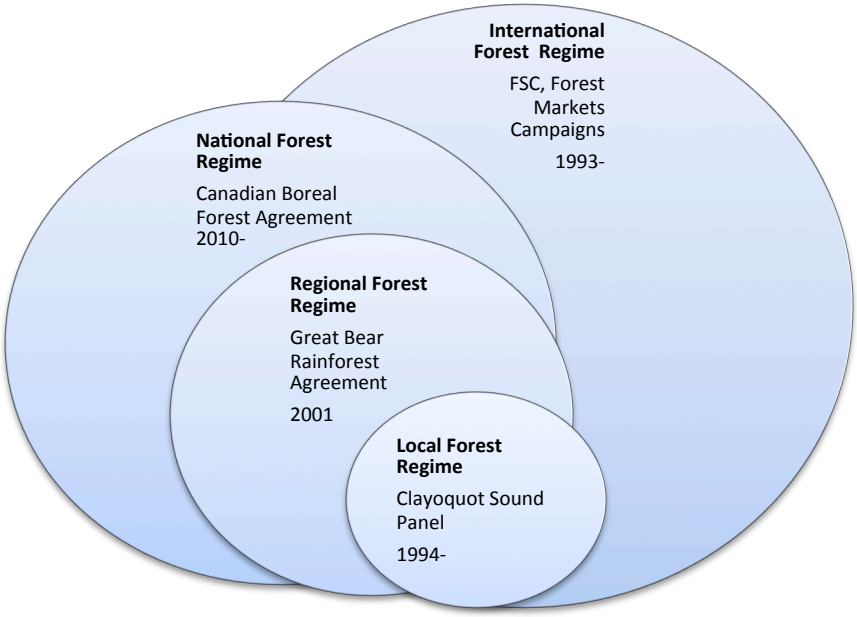

Figure 6. Canadian Forestry Agreements and International Markets: Different Spatial and Governance Scales of the Forest Regime

My study is focused on two cases - the Great Bear Rainforest Agreement (regional forest regime level) and the Canadian Boreal Forest Agreement (national forest regime level) – however, these occured within the larger context of the international forest regime, and scales above and below the regional and national focal systems were actively influenced by and influencing these two Agreement processes. The literature review in Chapter Three describes how this model of campaigning and resolution emerged first in Clayoquot Sound and then

spread to the Great Bear Rainforest and the Canadian Boreal Forest, as well as beyond to the international marketplace for forest products. The linked elements of the social innovation that were built on from Clayoquot Sound to the Great Bear Rainforest are shown in Figure 10.

Multi-level structure and cross-scale interactions

My research is focused on understanding how actors catalyze change in locked-in institutions, and in particular the cross-scale processes and agency involved in this transformative change process. According to resilience, social innovation and sociotechnical transitions approaches, cross-scale interactions are key to understanding how a system at a given scale changes (Geels, 2005; Gunderson and Holling, 2002; Westley and Antadze, 2010). Transformative capacity depends in part on a system or person's ability to draw on scales transcending their own (Gunderson and Holling, 2002). Novelty, learning and innovation are generated within smaller scales and can be introduced during the backloop of release and reorganization. Conversely, crisis at a smaller scale can cascade upwards and stimulate a system that has less resilience in the conservation phase to undergo a process of "creative destruction" or "release".

The multi-level perspective (MLP) frames transition processes as interactions between innovative micro-practices (niche experiments), meso-level structures of a sociotechnical regime, and long-term, macro-level exogenous trends that influence the regime (the sociotechnical landscape) (Geels, 2002; 2005; Rip & Kemp, 1998; Schot, 1998). Niches generate agency, new norms and practices, and radical innovations, and are influenced by incumbent regimes (Rotmans et al. 2001; Geels, 2005). Landscape processes, political or otherwise, bear down on regimes through interpretation by actors (Geels & Schot, 2007), generating stress and creating opportunities - acting as a stability landscape that provides "gradients for action" (Rip & Kemp, 1998; Geels, 2004).

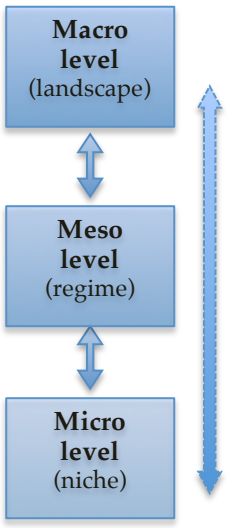

Figure 7. Generalized model of multi-level interactions

The multi-level perspective argues that transitions come about through interactions between processes at these three levels: 1) niche-innovations build up internal momentum, through learning processes, price/performance improvements, and support from powerful groups, 2) changes at the landscape level create pressure on the regime and 3) destabilization of the regime creates windows of opportunity for niche innovations. My research will explore and test these assumptions, by applying a generalized multi-level framework to depict cross-scale interactions, as in Figure 7.

Agency and Actor Strategies

To gain into insight into how deliberate agency of actors interacts with cross-scale processes, I draw on several perspectives that have not been investigated empirically in the literature on systemic change. Grin et al. (2010) propose that actors can advance 'constructive interference' between levels, to orchestrate the process of mutual reinforcement toward sustainable development. They characterize the ability to connect and mobilize such mutual

alignments as a 'distributed competence for strategic agency', where actors extend their agency by viewing issues from a meta-perspective. This meta-perspective and distributed competence allows actors to perceive immediate opportunities and limitations in wider patterns in space and time, that in turn allows for orchestration of mutually influential dynamics. Grin et al. (2010) identify three aspects of strategic agency are involved in orchestrating mutually reinforcing transitions towards sustainable development: 1) envisioning and advancing novel practices at the niche level; 2) opening up new institutional structures in relation to regime and landscape constraints or opportunities; and 3) sustaining ongoing connections between novel practices and new institutional structures to create a cycle of mutually reinforcing change. This orchestration capacity is described as being undertaken by policy actors, with little mention of the role of civil society, industry, and other important regime actors (Grin et al. 2010). My research seeks to test this assumption and deepen insights into the agency involved in such orchestration, by investigating mutual reinforcement dynamics in relation to the strategies of transnational civil society and forest company actors in the Great Bear Rainforest and Canadian Boreal Forest cases.

Furthermore, to add greater psychological depth and conceptual distinctions to the analysis of agency at personal and relational levels, I am incorporating the socio-cognitive agency theory of Bandura (2001; 2006). Bandura (2001) defines *agency* as intentional action to influence one's functioning, life circumstances or environment. In this socio-cognitive approach, humans are understood as both producers and products of their life circumstances, in mutual evolution with systems and structures. Bandura's view of agency (Bandura, 2001; 2006) is consistent with Giddens' (1984), who both reject a duality of human agency and a disembodied social structure. However, Bandura he provides more robust psychological research and concepts to understand personal and relational aspects of agency, which are under-described in Giddens' structuration theory. According to Bandura (2006) through cognitive self-regulation, humans can create visualized futures to act on the present, by

constructing, evaluating and modifying courses of action to secure valued outcomes and override environmental influences. Bandura (2006, pp. 165-166) defines three different modes of agency that are blended in everyday human functioning: personal, collective, and proxy (see Figure 8). *Personal agency* is expressed individually when people influence their own functioning and their environment. *Collective agency* refers to the interdependent efforts of people acting collectively, pooling knowledge, skills and resources in order to shape their future. *Proxy agency* is socially mediated, where people do not have direct control, but influence others who have knowledge, resources, or means to act on their behalf to accomplish outcomes they desire. I apply these distinctions within the concept of agency in more depth in Chapters 4 and 5, with a particular focus on how the three modes of agency operate and relate across scales in my two case studies.

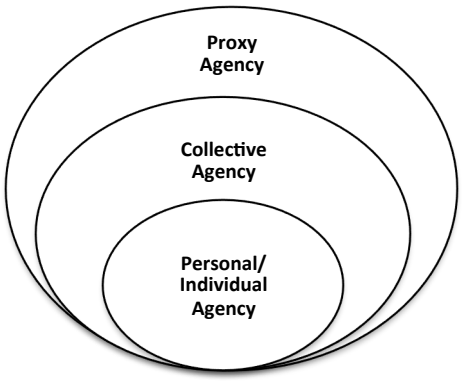

Figure 8. Generalized model of individual, collective and proxy agency (Bandura, 2001; 2006)

Process and phases of change

The final theoretical lens applied throughout this research deals with the temporal phases involved in change processes. Sociotechnical transitions theory describe four types of transition pathways, wherein the degree of change at the regime level is determined by the timing and nature of interactions between levels, in particular the readiness of niche innovations and the opportunity presented by landscape-level disruptions (Geels and Schot, 2007). Two of the four theoretical approaches focused on in this dissertation - resilience theory

(Gunderson and Holling, 2002) and social innovation (Westley and Antadze, 2010) - use the adaptive cycle to provide insight into complex change processes. As summarized in the section on resilience theory (p. 28), the adaptive cycle refers to a continuous process of both incremental (foreloop) and transformative (backloop) change over four phases, which has been described in both social and natural systems (Holling and Gunderson, 2002; Folke et al., 2010). Zeitsma and Lawrence also conceptualize a four-phase lifecycle of institutional stability and innovation (2010, pp. 208-210) that corresponds to the phases of the adaptive cycle, although it was developed independently. These phases are to be understood as heuristics, and may look far messier in practice.

Resilience theory portrays mature systems as change-resistant, where human and physical resources are locked up - known as the *conservation phase* (Gunderson and Holling, 2002). This corresponds with Zeitsma and Lawrence's (2010) phase of *institutional stability*, when inside actors maintain the boundaries of an organizational field by controlling membership and co-opting possible challengers, and maintain practices, regulations, knowledge and disciplines of the field. Over time, a successfully bounded field in the conservation or stability phase may be maintaining practices that have become disputed within the broader social context or by particular outside actors. When this occurs, the field transitions to a phase of *institutional conflict* if there are actors with the capacity to breach the boundaries of the institution and disrupt practices (Zeitsma and Lawrence, 2010). During the phase of conflict, field incumbents will bolster boundaries and defend their practices against attackers who seek to frame them as illegitimate. Additional breaching strategies include mobilizing connected actors and networks of outsiders to challenge the norms and frames of the incumbent institutions (Zeitsma and Lawrence, 2010). Gunderson and Holling (2002) describe this shift from the conservation phase as occurring when the dominant system becomes brittle, and unpredictable changes from larger and smaller scales can catalyze a trajectory of turbulent change - which they label creative destruction or *release*. During this conflict/release phase,

transformation to another system identity is possible. Connections between existing parts of the system are dissolved, dominant forms of organization are disrupted, capital is released, and novelty or innovation may emerge. From an institutional perspective, as field boundaries are compromised and practices continue to be disputed, actors who have the capacity to create new boundaries and practices come to the fore.

What follows is a phase of *reorganization* where emphasis is on exploration, adaptive learning, recombination and renewal (Gunderson and Holling, 2002). During reorganization, a system undergoes either adaptive or transformative change, depending on the level of disruption that has occurred and the influences from other scales and system domains. This phase is referred to as *institutional innovation* by Zeitsma and Lawrence (2010), during which time possible solutions are constructed, and powerful new narratives are created. Innovation develops when it is shielded from institutional discipline, and actors can create a protected space for solutions and experimentation. Finally, those actors involved in creating new frames and practices advance the phase of *institutional restabilization*, connecting to potential adopters and critics and promoting new practices by emphasizing their legitimacy and removing barriers to their adoption - often by making cross-boundary connections. Resilience theorists refer to this phase of the adaptive cycle as *exploitation*, a process of stable and incremental change, where resources are freely available and resilience is high, enabling emergence, growth, and implementation of newly developed initiatives.

Figure 9. Phases of System Change in from Resilience and Institutional theory (Gunderson & Holling, 2002; Zeitsma & Lawrence, 2010).

The phases of change in these two four-phase models have strong correspondences, which I synthesize in into a generalized four-phase process of system change (Figure 9). In Chapter 4,

I apply the adaptive cycle to illuminate patterns of agency during the turbulent backloop phases in the Great Bear Rainforest case. In Chapter 5, I compare the process of deliberate innovation and the systemic change outcomes of the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement, using the phased change framework of Zeitsma and Lawrence (2010). In the conclusion, this generalized four-phase process describes the unfolding temporal sequence as part of the final model of multi-level agency I propose.

Summary of theoretical approach

I began this chapter with a multi-paradigm review, focused on social innovation, resilience, sociotechnical transitions and institutional theory. I also briefly compared and contrasted these paradigms, identifying common conceptual elements, and identifying blind spots and gaps in the theories. Finally, I described a theoretical framework consisting of four conceptual elements that will be used to guide my inquiry into the agency and cross-scale processes involved in transformative social change, in particular the strategies environmentalists and other actors pursue to catalyze changes in locked-in institutions. This theoretical framework will be used to synthesize my findings from each chapter in the conclusion, to provide further insight into my research questions. To summarize, the conceptual elements in the theoretical framework are:

1) **Defining the system of concern:** My system of concern is forest regimes, which occur at level of regimes or organizational fields. By specifying the system of concern and the level of analysis I can evaluate impact at different spatial and governance scales of the forest regime. The focal paradigms included here also conceptualize systems based on complexity and evolutionary theories, where the context and process of change in a system co-emerges based on relationships between agency and structure. In Chapters four and five I analyze processes of cross-scale agency involved in regional (GBRA)

and national (CBFA) forest regimes. Chapter six focuses on evaluating institutional impacts at different levels of the regime.

2) **Multi-level structure and cross-scale dynamics:** My research explores and tests assumptions from the multi-level perspective (MLP), by applying a generalized framework to examine cross-scale interactions, specifically in Chapter five. Chapter four also addresses the multi-level dynamics involved in agency.
3) **Agency and actor strategies:** I apply concepts of distributed agency and mutual reinforcement dynamics from Grin et al. (2010), and Bandura's (2006) three modes of agency: personal/individual, collective and proxy, to examine actor strategies and cross-scale interactions in Chapters four and five.
4) **Phased change process:** I analyze the process of deliberate innovation and the systemic social innovation outcomes from the GBRA and CBFA using a phased change model. In Chapter four, I apply the adaptive cycle from resilience theory to understand strategies and pathway s in a phase of disruptive change. In Chapter six, I apply Zietsma and Lawrence's (2010) model of institutional change.

In the conclusion, I apply this theoretical framework to consider the processes of agency, operating across specific scales and phases of change, to answer the research questions. The next chapter reviews the existing literature on the cases at different scales of analysis.

Chapter 3. Case Background - From Clayoquot Sound to the Great Bear Rainforest and Canadian Boreal Forest Agreements

My research looks in depth at two cases of multi-sector negotiations that led to changes in forest management and practices in two regions of Canada – the Great Bear Rainforest on the pacific coast of the province of British Columbia (BC), and the vast Boreal forest stretching across Canada's north. These cases exemplify an innovative approach to environmental campaigning and institutional change that emerged out of BC's Clayoquot Sound, where a global coalition of environmental organizations (ENGOs) created a new form of campaign aimed at the international customers and consumers of wood products originating from contentious old growth wilderness areas. Referred to as 'markets campaigns' these strategeis were intended to add leverage to environmentalists' advocacy efforts, and were aimed at protecting such 'endangered forests' from being logged and irreparably fragmented. This chapter provides an overview of the 20-year history of coastal forest conflicts, markets campaigns, and the expansion of conservation efforts onto Canada's boreal forests. I summarize the strategic elements that were first generated in Clayoquot Sound and honed in application to the Great Bear Rainforest, which make up the "social innovation" described in the case studies. I include a timeline of relevant events between 1993 and 2013.

Overview of the Cases

British Columbia is internationally recognized as having been the site of intense public controversy over forest policy and land use through the 1980s and 1990s. Social movement struggles over coastal rainforest conservation in BC have also been a site of research interest since the conflict over Clayoquot Sound in the early 1990s (Bernstein and Cashore, 2000; Magnusson and Shaw, 2002; Stanbury 2000; Wilson, 1998). This scholarly attention followed intense bouts of media and public scrutiny, most notably during the large peaceful protests, blockades, arrests and trials associated with Clayoquot Sound in 1993-1994, which marked the

largest civil disobedience in Canadian history up to that point, where over 10,000 people gathered to protest clearcutting of pristine old growth rainforest valleys, and over 800 arrests occurred. The protests of diverse citizenry, and environmentalists' contentious boycotts of the international customers of MacMillan Bloedel, the logging company in the region, eventually led to the creation of the Clayoquot Science Panel. This panel of local First Nations (aboriginal) people, foresters and scientists resulted in a significant new paradigm of ecosystem-based forest management in the region, parks creation on several valleys, and establishment of a First Nations-owned forest company, Iisaak (Clayoquot Archives, 2013). Magnusson and Shaw (2002) summarize the many emergent trends exemplified by the case:

> At Clayoquot, we can observe a number of increasingly familiar - but still inadequately analyzed - phenomena: among other things, the shift from an industrial to a postindustrial economy, the rise of environmentalism as a new form of political consciousness, the emergence of postcolonial challenges to existing authority, the development of transnational political movements, the articulation of new forms of science, the recognition of hybrid identities, and the proliferation of new institutions and practices of political negotiation. (2002, p. vii)

The Clayoquot Sound case contains seeds out of which grew both the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreement (CBFA).

Clayoquot Sound was the site of several simultaneous and interrelated innovations in environmentalists' strategy and practice. The conflict peaked in 1993-4, just as Greenpeace International and World Wildlife Fund were collaborating with and stakeholders at the global level to create an international non-state market mechanism to advance sustainable forestry - the Forest Stewardship Council (FSC) (Pattberg, 2012; Cashore, 2002). ENGO actors were placing increased attention on the potential of global forest products markets as a leverage-point for change. Campaigns surrounding Clayoquot marked the first time environmentalists

tracked wood coming from a threatened region, and launched "boycott" campaigns targeting forest product markets - specifically against Bell Telephone and Scott Paper. As conflict intensified, representatives within MacMillan Bloedel and ENGOs recognized and the need to craft solutions collaboratively with First Nations - bypassing government and initiating direct negotiations. Through intense conflict, the parties navigated the constitutional and operational implications of new First Nations Rights and Title case law upholding traditional claims to the land (Berman, 2011). The Agreement in Clayoquot Sound created structures and institutions for resource management that honored and advanced First Nations rights and title as well as opportunities for social and economic development. Clayoquot Sound represents the first time in BC and Canada when the sovereignty rights of indigenous people were woven into an environmental settlement. However, a tremendous amount of energy went into the protection of a relatively small region, and based on their learning and victories from Clayoquot Sound, environmentalists sought to expand their impact by aiming at the wider industry, and the remaining coastal rainforests northward.

According to Shaw (2004), environmentalists transformed their approach because of their experience in Clayoquot: "In other words, partly in recognition of the limits of their success in Clayoquot Sound, and also armed with the lessons learned there, environmentalists fundamentally shifted the character of their campaign from one of forest protection to an effort to restructure the forest industry to render it environmentally sustainable. They also shifted the spatial reach of the campaign, expanding the political terrain they sought to mobilize." It is this innovation I am following in my research on the Great Bear Rainforest and Canadian Boreal Forest Agreements.

The impact of a social innovation is related to the elements that make it up, and the distinct constellation of relationships between them (Westley and Antadze, 2010). The innovations in the model of conflict and solutions from Clayoquot Sound were carried over into the Great

Bear Rainforest - millions of hectares of unprotected forests targeted for clearcutting that lay British Columbia's central and north coasts. The constellation of strategic elements involved in the "social innovation" that spread from Clayoquot Sound to the Great Bear Rainforest is shown in Figure 10, and includes 1) distributed regional and international markets forest campaigns generating conflict, leverage and new demand for eco-wood products; 2) negotiation of a "cease-fire" where logging in contentious areas and market campaigns are suspended; 3) creation of a "solutions space" for development of innovative solutions between ENGOs and industry; 4) establishment of a credible science panel to generate new knowledge and define ecologically and culturally sound practices (ecosystem-based management); 5) significant participation of First Nations leading to co-management and power redistribution; and 6) gaining formal legislation of the negotiated outcome.

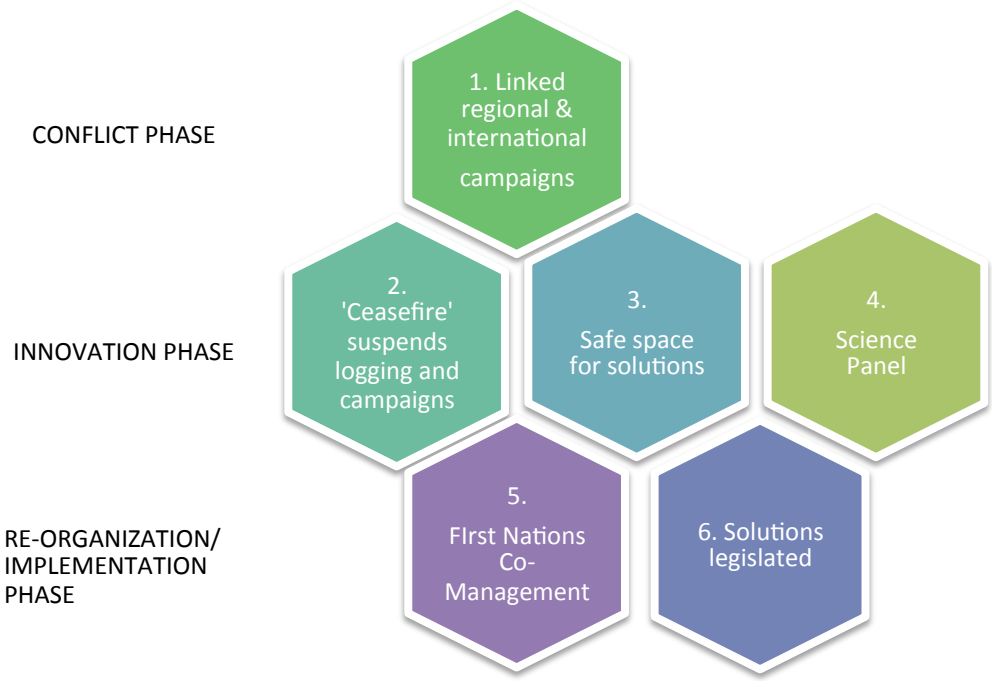

Figure 10. Linked Elements of the Social Innovation Advanced from Clayoquot to GBRA

ENGOs leading markets campaigns, in particular ForestEthics, Canopy and Greenpeace, built on this innovation approach again when they expanded their campaigns to seek protection of Canada's boreal forest. The strategies applied in the boreal forest included the

first four elements listed above, but did not incorporate First Nations traditional rights or advance co-management. In 2008, nine ENGOs, the Forest Products Association of Canada, and the association's 21 member forest companies entered into secret negotiations to develop a pan-Boreal solutions process. In April 2009, a cease-fire agreement was reached, where companies voluntarily placed more than 28 million hectares of caribou habitat in logging deferral, representing 98% of the caribou range in FPAC member tenures, and markets campaigning ENGOs agreed to suspend their 'do not buy' campaigns. Over the next year, the parties negotiated the six goals of the Canadian Boreal Forest Agreement (CBFA), resulting in its announcement in May 2010. Encompassing 72 million hectares of public forests licensed to forest companies, the CBFA included agreements to advance world-leading forest practices, protect Woodland caribou, dramatically reduce forest sector greenhouse gas emissions, and improve forest sector prosperity and marketplace access for Canadian forest products (CBFA, 2010). The CBFA did not involve the active participation of First Nations across Canada - largely because there was no obvious governance body to engage, and because the undertaking was felt to be far to complex by the parties, given the presence of more than 150 individual First Nations, Metis and aboriginal groups with overlapping territories and differing legal rights across Canada. The intent of ENGO and company signatories was to forge the CBFA first bi-laterally, and then based on this common agenda to seek collaboration and new legislation with both provincial governments and First Nations governments across Canada. However, upon its announcement, the Agreement met with significant First Nations opposition (Stueck, 2010), which is described in more detail in Chapter 6.

The final aspect of the model of innovation - gaining government adoption of the negotiated outcome - has yet to occur for the Canadian Boreal Forest Agreement, because ENGO and forest company leaders have not agreed on protected areas proposals or caribou recovery plans, and provincial political processes have not yet provided opportunities for legislation. Nonetheless, the scope of conservation efforts has increased steadily in these cases,

along with the number of actors, the area of land involved, and the jurisdictional complexity involved in establishing new governance structures in the region of interest. Table 2 summarizes the increasing scope and scale of forest conservation initiatives from Clayoquot Sound, thorough the Great Bear Rainforest Agreement, to the Canadian Boreal Forest Agreement.

Case	Valleys	Land Area	Firms	First Nations (FN)	ENGOs	Jurisdictions
Clayoquot Sound	Five	350,000 hectares	One	Three	Four to Five	One land use table One province Three First Nations
GBRA	Hundreds	Seven million hectares (64,000 km2)	Five to Six	16-27 depending on definition	Three to Four	Two land use tables One province Twelve+ First Nations jurisdictions
CBFA	N/A	76 million hectares	21	None	Seven + Two funders	Seven provinces One nation + Hundreds of First Nations w/Treaty, legal and traditional rights

Table 2. Increasing Scope and Scale from Clayoquot Sound Land Use Plan, to Great Bear Rainforest Agreement (GBRA) and Canadian Boreal Forest Agreement (CBFA)

The Great Bear Rainforest Agreement and Canadian Boreal Forest Agreements are simply stand-alone innovations that can be compared, but rather are interwoven over time, through shared institutional contexts, and even the participation of common actors who brought increasingly seasoned perspectives. The Great Bear Rainforest Agreements emerged out of prior coastal forestry conflicts in the 1980s and early 1990s. This coincided with the creation of the Forest Stewardship Council and ENGO initiation of global markets campaigns, which were intensely focused on the clearcutting of rainforests in the pacific coast of Canada. The Canadian Boreal Forest Agreement was negotiated on the historical backdrop of these campaigns, and was influenced by them, along with changing economic contexts and other regional and national political and social conditions.

Since 1993, environmentalists' efforts to restructure the forest industry have grown to encompass a wide network of people across sectors who are advancing innovation by shifting the global market and supply chain for forest products towards more sustainable practices and extending the negotiated solution model established here to other regions. Table 3 shows a 20-year timeline from Clayoquot Sound to the CBFA. In 1997 several ENGOs involved in Clayoquot Sound, including Greenpeace, Sierra Club of BC, Rainforest Action Network, Natural Resources Defense Council, and the coalition that became ForestEthics, expanded their focus northward to the world's largest remaining area of unprotected rainforest, which they christened the 'Great Bear Rainforest' for their campaigns (McAllister et al., 1997).

During the Great Bear Rainforest conflict markets campaigns were scaled up to target several companies operating in the Great Bear Rainforest, and also specific market sectors, including solid wood/Do-It-Yourself stores, Fortune 500 companies, office supply stores, and later the magazine industry. The international network of ENGOs, led by Greenpeace, developed network of large, ecologically-concerned European customers, such as Germany's Verband Deutscher Papierfabriken (VDP) and the Verband Deutscher Zeitschriftenverleger (VDZ), who were jointly responsible for about $600 million dollars of purchasing in British Columbia (BC). Representatives from the VDZ-VDP visited BC three times between 1997 and 2002, in order to learn about the situation in the coastal rainforests and express their desire for an ecologically appropriate solution to be found. Markets campaigns focused both on high consumption sectors, and also on other globally endangered forest regions - a designation that emerged as new satellite data and mapping technologies enabled large-scale imaging and analysis. Canada's coastal rainforests acted as a 'poster child' for this broader global campaign, which was designed to protect not just the region, but to redirect markets away from all endangered forest areas. The regional outcome linked to this global effort was also modeled on Clayoquot Sound - environmental representatives sought to create a non-governmental

platform to directly negotiate with forest companies in order to establish ecosystem-based planning in the Great Bear Rainforest.

Date		Event
1993	Clayoquot Sound conflicts FSC founded	Clayoquot Summer: 10,000 people protest and over 800 arrests Forest Stewardship Council established First markets campaign launched in Europe, US and Japan.
1994 - 1995	Markets campaigns expand	Scott Paper UK cancels BC contracts, PacBell calls for change in Clayoquot Industry officials visit European customers, host visits to BC forests Clayoquot Science Panel released: Ecosystem-based principles, guided by First Nations traditional knowledge and independent science.
1996-1997	Great Bear Rainforest LRMP and campaigns begin	UK, Europe and US marketplace blockades and actions by ENGOs, increasing customer concern about coastal old growth clearcutting Industry and ENGO polarization and conflict escalates in media BC government implements Forest Practices Code and launches Central Coast LRMP. ENGOs boycott process, First Nations act as "observers"
1998 - 1999	GBR ceasefire Boreal ENGO campaigns begin	Environmentalists labeled "Enemies of BC" by premier German delegation visits GBR, demands parties find solution Home Depot Announces new sourcing and 'endangered forests' policy Coastal forest companies create CFCI industry coalition 1999 - Standstill agreement reached between CFCI and ENGOs in GBR temporary logging deferral in 100+ intact valleys, halt of market campaigns Boreal Campaign begun (Pew Environment Group, other ENGOs) Boreal land use plans for north announced by several provinces
2000	Joint Solutions Project begins in GBR	Joint Solutions Project (JSP) formed between GBR companies and ENGOs Operation Defend launched in response by community mayors and labor Forest Products Association of Canada founded
2001	GBR Land Use Announcement	First Great Bear Rainforest Land Use announcement, government and First Nations protocol signed, jointly fund independent science Coast Information Team
2002-2003	Boreal campaigns begin	Greenpeace and ForestEthics research and initiate Boreal market campaigns Boreal Framework Agreement reached among energy and forest companies, First Nations, ENGOs and investment firms, aims for 50% protection of ecosystem
2004-2005	GBR planning processes continue Species at Risk Act	Central and North Coast LRMPs make consensus recommendations, EBM handbook developed, JSP makes protected areas recommendations Province of BC & First Nations Government-to-Government agreements Canadian Species At Risk Act becomes law, 2005
2006	Boreal campaigns GBRA legislated	Victoria's Secret/Limited Brands cancellation Boreal forest contracts Great Bear Rainforest Land Use Planning ratified/legislated, commit to full EBM implementation by 2009 with milestones Coast Opportunities Fund established to raise $120 million in GBR
2007	Boreal Conflict, exploratory conversations	Market campaigns continue, companies receive customer letters of concern Iinformal conversations scope negotiations between FPAC and ENGOs 2007/8 Woodland Caribou National Recovery Strategy FPAC Announces Climate Neutrality goal for 2015
2008	CBFA negotiations formally begin	Mediator/facilitator engaged by ENGOs and FPAC Agreement to pursue negotiations between ENGOs and FPAC
2009	Boreal Deferrals, Negotiations Proceed	April 1, 2009: Logging deferrals set aside 28 million hectares (98%) of Boreal caribou range in FPAC member tenures, ENGOs suspend "do not buy" campaigns. ENGO outreach tour, Industry-government relations meetings, FNs outreach
2010	Concluding negotiations CBFA signed	Final CBFA Caucus coordination, side agreements negotiated, milestones developed and communications agreements reached May 18th CBFA public announcement, six goals and milestones
2011 - 2013	CBFA Implementation Phase	CBFA advances milestones, faces funding and capacity challenges Greenpeace (Dec. 2012) and Canopy (April, 2013) withdraw from CBFA EBM guidelines finalized for Great Bear Rainforest (2013/4)

Table 3. Twenty-year timeline from Clayoquot Sound to the CBFA

Key people involved in Clayoquot Sound from within the forest industry helped the coastal forest sector get to the negotiations table. Markets campaigns succeeded in bringing coastal forest companies to the negotiations table, and the Joint Solutions Process was established, along with a mutual 'cease-fire' between parties. The bi-lateral negotiation allowed former enemies to engage in collaborative dialogue, to transform their sectoral visions into encompassing solutions, and to pilot new ways of planning and working.

After years of intensive negotiations with one another, with the regions' First Nations, and with the provincial government, in 2006 the Great Bear Rainforest Agreements were announced. The agreement protected 33% of the landbase, enacted laws governing ecosystem-based management, established new government-to-government relationships between the BC government and First Nations, a implemented $120 million dollar fund to support conservation and sustainable economic development in First Nations' communities, and structures to enable collaborative governance and adaptive management (Armstrong, 2010).

In the early 2000s, markets-focused groups Greenpeace, ForestEthics and Canopy expanded their focus to a new region of Canada - the vast northern Boreal forests. Campaigns led by the Canadian Parks and Wilderness Society, David Suzuki Foundation and other ENGOs also built public support and raised awareness about the risks to the boreal forest and woodland Caribou. In 2008 a coalition of 9 ENGOs quietly entered into bi-lateral negotiations with the 21 member companies of the Forest Products Association of Canada, to resolve marketplace conflict and address the ecological and economic interests of each party. Early negotiations involved a 'ceasefire' whereby ENGOs would suspend their markets campaigns and forest companies with cutting rights in endangered woodland Caribou habitat would defer their logging activities. In 2010, the Canadian Boreal Forest Agreement was reached, initially covering 72 million hectares of forest, and articulating six shared goals that industry and ENGOs would continue working towards.

Literature Review

Canadian forestry and land use conflicts, particularly those surrounding British Columbia's iconic old growth rainforests, have been written about through a wide variety of disciplinary lenses. A review of literature on these land use conflicts, and ENGO forest and markets campaigning more broadly, reveals the richness of the different perspectives taken by researchers: their different scales of analysis, the points in the process they write about, and the varying conceptual lenses used to analyze these examples. Given the relatively recent Canadian Boreal Forest Agreement, there is little other published research, with the exception of Kittmer (2013), whose masters' thesis advances a blistering post-structuralist critique of the CBFA as advancing a neo-liberal, neo-colonial agenda with no redeeming features. As I mention in the introduction, as part of this research I have written a detailed narrative of the case (Riddell, 2015, *in press*) for a cross-sector audience seeking to understand the underlying conditions that led to the CBFA, and how it might inform other multi-sector solutions processes.

Below I review the literature focused on the Great Bear Rainforest Agreement, ENGO markets campaigns, and the emergence of transnational forest certification as a form of global governance, which focus on the following areas, with some overlap: 1) multi-stakeholder land use planning or resource management policy; 2) forest certification as a form of global governance, and the role of these regional forest conflicts in driving demand for certification; and 3) analyses of markets campaigns and ENGO forest conservation strategies. However, it is not simply the elements alone that make up the innovation, but how they are brought into continuous relationship with one another across scales and through various forms of agency that make the innovation approach both impactful and unique. In spite of their important relationship, these three elements of the model are treated in isolation in the majority of the literature. This is the first research that looks holistically at the 20-year arc of these cases, with their interconnected elements, across regional, national and international scales.

Multi-Stakeholder Resource Management Policy

"*The Great Bear Rainforest Planning process is a landmark environmental planning initiative that provides a new approach for achieving sustainable development with worldwide applicability*." (McGee, Cullen and Gunton, 2010).

Great Bear Rainforest Agreement (GBRA) is of interest to researchers in geography, resource management, sustainable development, planning, and conflict management because it exemplifies many innovative aspects of multi-stakeholder processes and new collaborative governance arrangements. The new legislation and parks designations resulting from the GBRA, combined with the EBM approach, may be the largest of its kind globally. It is also believed to be the largest such region to have both Aboriginal/First Nations co-management and highly transparent and adaptive governance structures (Price et al., 2009). Several reports written by practitioners involved in the Great Bear Rainforest process distill practical lessons learned as environmental organizations and forest companies shifted from conflict to collaboration (Armstrong, 2010; Smith, Sterritt and Armstrong, 2007; Smith & Dobell, 2010). They focus on how First Nations on the coast united to draw on new forms of political and legal power and re-assert their traditional title in the region and describe the $120 million invested into the Conservation Investments and Incentives Initiative to aid economic transition for coastal communities (Smith et al., 2006). Participants in the GBRA were clear about their goals to re-institutionalize new forms, boldly stating "new institutions, new legislation, new forest practices, new businesses and a new economy need to be created", pointing to the necessary role innovation played both in achieving agreement, and in guiding next steps (Smith et al., 2006).

McGee et al. (2010) tout the Great Bear Rainforest Agreement as "a landmark environmental planning initiative that provides a new approach for achieving sustainable development with worldwide applicability." Their comprehensive depiction of the structures and organizational forms, governance processes and timelines involved in the two planning

processes that made up the GBR agreements between 1996 - 2006 points to innovations in science, First Nations governance inclusion, and economic transition funding. Yet, their analysis seriously downplays the extreme and unique levels of local and global conflict over the region, and the decisive role of markets campaigns and court decisions regarding First Nations rights and title that shifted predominant power dynamics and created institutional openings for the new model. Competing actor strategies and political machinations that went on behind the scenes are also not discussed by McGee et al. (2010). Moore and Tjornbo (2012) use the Great Bear Rainforest Agreement as an example of governance innovation towards sustainability in linked social-ecological systems, using a typology of power developed by Barnett and Duvall (2005) to see how the use and distribution of different kinds of power shaped the course and outcomes of Agreement.

Howlett et al. (2010) offer a nested framework to consider the GBR case in light of the literature on shifts from government to new governance forms - using three matrices to evaluate institutional, political and regulatory dimensions of changes in governance in British Columbia resulting from the Great Bear Rainforest land use plans. They find that with the exception of new protected areas, the nature of the "adaptive governance" adopted to govern ecosystem-based management may recreate current institutional patterns, and may not represent a truly innovative or "new governance" arrangement. While their analysis acknowledges the role of marketplace power generated by environmental activists in catalyzing change, they do not evaluate the global implications of forest certification governance mechanisms, multi-scaled marketplace impacts from shifts toward green purchasing, or potential impacts from changing norms - analyzing the case mainly at the regional level. Saarikoski et al. (2013) challenge Howlett et al. (2010) for offering a limited analysis of the impact of the Agreement by introducing a multi-level frame, combining collaborative planning theory and a policy regime approach to include the institutional, relational and discursive aspects of policy change that have occurred. They emphasize the

need to look at negotiated settlements through lens of political conditions, acknowledging the role of multiple levels above and below the regime or regional level in influencing changed institutional outcomes.

Forest Certification

"*Linking together diverse and often antagonistic actors from local, national and international levels, certification institutions have arisen to govern firm behavior in a global space that has eluded the control of states and international organizations*" (Gereffi et al, 2001, pp. 64-65).

The second framing in the literature focuses on global forest certification, through the lens of global governance, institutional theory, and international relations. Forest certification has been pursued as a response to weak national forest governance and missing global environmental governance structures, as well as an NGO attempt reign in unregulated markets and shape global supply chains (Gereffi et al., 2001; Pattberg 2010; Cashore and Bernstein 2007; 2012). Cashore (2002) coined the term 'nonstate market-driven governance mechanisms' (NSMD) to describe such certification systems. Gereffi et al. (2001) describe the development of the Forest Stewardship Council (FSC) certification as a strategy by Greenpeace and World Wildlife Fund (WWF) to delegitimize weak industry standards and inadequate enforcement measures, and to provide more stringent codes of conduct, and industry practices. FSC is also credited with transforming power relations between NGOs and firms in the global arena by creating governance options for global supply chains (Gereffi et al., 2001).

Global governance scholars look at how ENGOs elude traditional state authority and fill the global governance vacuum by creating incentives and forcing companies to change practices and reorient supply chains. Cashore and Bernstein (2007) develop an analytical framework designed to better understand the emergence of NSMD governance systems and the conditions under which they may gain authority and legitimacy to create policy. Pattberg (2012) uses the example of the Forest Stewardship Council certification to illustrate the rise of

international and transnational governance regimes along with the increasing inadequacy of state-centric conceptions of world politics to depict and account for reality. Taking an institutional and global governance view on FSC, Pattberg analyzes its global effects, and concluding that it has had significant transformative impacts on the forest products industry (Pattberg, 2012, 108 - 110). Taylor (2005) takes a more critical perspective, identifying the ways that FSC privileges northern forests and actors, especially from representatives of the global south, due to disproportionate amount of northern forests certified. He also contrasts FSC with the Fair Trade labeling scheme, finding FSC to have less of a transformative impact on conventional market structures, because FSC neither changes the beneficiaries of the commodity chain, nor challenges conventional market logics and practices (Taylor, 2005).

FSC is only sometimes considered as part of a broader suite of multi-scaled ENGO strategies to shift supply chains, generate new forms of power and legitimacy at the regional level, and protect forests and implement sustainable forest practices. Bernstein and Cashore (2012) use the case of FSC to develop a framework of four pathways of influence caused by the dynamics occurring between actors and institutions at different scales in order to understand their influence on domestic/national policy and firms. Bernstein and Cashore (2012) and Pattberg (2012) also address the multi-level influences of certification, both through its direct power as a global mechanism regulating markets, and through its significant impacts on national policies and on transnational firms. One in-depth study of emergence of the FSC (Cashore, Auld and Newsome 2004) does illustrate the co-evolving dynamics between ENGO strategies in BC and the development of FSC globally and regionally, by tracing the dynamics of protest and forest company accommodation during British Columbia's "War in the Woods" from Clayoquot to the Great Bear Rainforest - however the analysis is mainly applied in order to understand the emergence of a global NSDM system, and not to foreground the transformative strategies employed by ENGOs. In contrast, the literature on markets campaigns advances this perspective by specifically analyzing ENGO strategies and their

political and marketplace impacts.

Markets Campaigns and ENGO Strategies

> [*The Great Bear Rainforest] case is not just an example of how national or provincial authority was 'evaded' through creation of new global governance mechanisms, or of how those now influence these other levels of government, but of a disruption of the fundamental territoriality of a sovereign state by the new politics of global civil society* (Shaw, 2004).

> "*Previously ENGOs have targeted governments, but increasingly they have focused on corporations because of their increased prominence in dominating policy agendas of national governments and international organizations"* (Gritten and Mola-Yudego, 2005).

> "*It was like discovering gunpowder for environmentalists*" (Greenpeace activist quoted in Gereffi et al., 2001, p. 64)

Another strand of literature focuses on ENGO strategies of markets campaigns and their influence on global firms and forest governance. O'Rourke (2005) brings an industrial ecology lens to describe the tactics and strategies of ENGO markets campaigns that aim to shift forest and paper supply chains, assessing their influence on corporate practice. This analysis looks at the success of ENGO's network strategies and campaign activities in their efforts to develop and advance multi-stakeholder marketplace standards and certification. Affolderbach (2011) describes the distinct strategies of ENGO campaigns as they shift easily between repertoires of tactics and between places and scales. She highlights ENGOs' use of nonviolent direct action to stop or restrain economic activity, together with consumer boycotts, public education, and lobbying. ENGOs also seek strategic alliances with brokers and intermediaries that do not necessarily participate in the bargaining process themselves but give them considerable leverage (Affolderbach, 2011).

Gritten and Mola-Yudego (2010) depict ENGO markets campaigns as a response to globalization of the forest industry, developing an analysis of how ENGOs boycotts of forest

and paper products targeting shareholders, retailers and an array of stakeholders operate to generate financial pressure on forest companies and their corporate customers, which they term "blanket campaigns". Den Hond and Baker (2007) look at how activist groups have cultivated field-level change through influencing corporate social change activities, using social movement and institutional theories. Their research shows how forest activists influence field change and firm practices, categorizing the different tactics used by radical and reformist groups during periods of de-institutionalization and re-institutionalization, and finding that radical groups spend more resources and time in de-institutionalizing and reformists spend more time re-institutionalizing (Den Hond and Baker, 2007). While these articles develop industry-level understandings of the impact of ENGO campaigns, they neither link markets campaigns with the concrete forest policy outcomes that affect ecosystem management, nor do they analyze the global governance implications and multi-level influences of market-place shifts and the creation of market instruments such as the Forest Stewardship Council. A few authors do point to the complex, interconnected, and multi-level dynamics of these aspects of the cases, however.

Affolderbach (2011) analyzed the environmental bargaining and cross-scale strategies advanced by networks of ENGOs through the lens of economic geography. She highlights that in these cases "space should be understood not as "scaling up or down" from the local to the global, and vice versa, but more as multi-scalar networking" where social relations are expressed through political coalitions and the leverage these can provide to manipulate the range of action opponents' actions. ENGOs are analyzed as local and global actors with influence both on regional land use and on global institutions such as forest certification. Magnusson and Shaw (2002) and Shaw (2004) use environmental politics and political theory lenses to conceptualize how the environmental movement is "constituting new political spaces". Shaw (2004) recognizes the evolution of environmentalist purposes through the inception of markets campaigns to focus on restructuring the marketplace for wood and paper

products globally, through the long-term strategies of 'greening' consumption behavior, creating alternatives to destructive practices, and establishing criteria for what should count as 'sustainable' forestry methods and 'endangered' forest types, and shorter-term campaigns to boycott particular regions or forest types that are immediately endangered. Shaw (2004) frames the Great Bear Rainforest campaign as part of a much broader political strategy that is disrupting the "fundamental territoriality of a sovereign state by the new politics of global civil society" and causing a range of new political spaces and authorities to be constituted. She problematizes this from a democratic standpoint, characterizing the direct negotiation approach between multi-national forest companies and ENGOs as an "evasion of sovereignty."

The review of literature above illustrates how the Great Bear Rainforest and Canadian Boreal Forest cases can be read as regional multi-stakeholder resource management challenges, globally as cases that have catalyzed adoption of forest certification and advanced new global governance institutions, and as seminal examples of emerging global/local strategies of civil society organizations through ENGOs linked market campaigns and negotiations approaches. These diverse theoretical and practical foci of analysis begin to encompass the multi-dimensionality and cross-scale nature of the cases. The amount of analysis of the Great Bear Rainforest and marketplace strategies, in addition to the ongoing experimentations through the Canadian Boreal Forest Agreement, makes them excellent cases for further analysis, and a comparison of what various multi-level, transdisciplinary theories of change can illuminate about scale, agency and innovation towards sustainability.

My research contributes a multi-paradigm and cross-scale perspective on the evolution of ENGO strategies, analyzing their impacts on the forest sector over decades using the examples of the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement. Change in forestry regimes in Canada over the 20-year period from 1993 - 2013 occurred at the regional level (GBRA), national level (CBFA) and international level (marketplace change). In the

following chapters, I explore the strategic agency and change process involved in advancing the GBRA and CBFA at different scales of analysis, using the multi-paradigm analysis described in Chapter two (Lewis and Grimes, 1999).

Chapter 4 applies the lenses of resilience (Gunderson and Holling, 2002), social innovation (Westley and Antadze, 2010) and agency (Bandura, 2001; 2006) to analyze the individual and collective processes of agency that catalyzed systems change in the Great Bear Rainforest case. Chapter 5 applies the multilevel perspective (MLP) from sociotechnical transitions theory (Geels, 2005; Geels and Schot, 2007) and agency theory (Bandura, 2001; 2006) to explore the how ENGOs mobilized mutually reinforcing and distributed agency to encouraged sustainability transitions through the Great Bear Rainforest and Canadian Boreal Forest Agreements. In Chapter 6, I compare the systemic change impacts of each Agreement, using social innovation and institutional lenses to create a framework for evaluating social innovation as institutional change. The conclusion summarizes the main findings from each chapter, and synthesizes a cross-scale model of the patterns of agency and phases of innovation involved in the two cases.

Chapter 4 - Agency and Innovation in a Phase of Turbulent Change: Conservation in the Great Bear Rainforest

Introduction

The rallying cry for a new generation of activists is the famous quote, attributed to M.K. Gandhi, that "we must be the change we wish to see in the world." This is a call both to enact change, and to embody a desired future in one's current way of life. Yet, when impersonal political and economic structures and large-scale cultural forces are implicated in systemic problems such as poverty, climate change, or species loss, what power do individuals truly have to create positive social and organizational change? So-called messy, wicked, or complex problems refer to problems whose very definition is contested, and for which solutions are unknown, multiple, and emergent. Organization- or leadership-based theories can be inadequate to explain change in these complex problem domains: those with convoluted overlaps of authority, institutions operating at multiple scales, and a multiplicity of actors with clashing beliefs that frame the problem differently and generate competing knowledge claims. Yet individuals *are* enacting change, and impacting on large-scale problems – with both positive and negative consequences. Many cases describe how courageous individuals and collections of people can catalyze social innovations through their own agency and tenacity (e.g. Bornstein, 2007; Hawken, 2007; Westley et al., 2006).

Given the increasing complexity of the problems in our world, theories of agency that illuminate, without privileging, the role of individual change makers in addressing complex problems, are an important part of theorizing change. Such theories, when consistent with complexity theory, suggest that positive change has an emergent process: that change at the individual level can change group dynamics which in turn can change broader system dynamics (Westley et al. 2006). A complexity- and agency-based approach contrasts with heroic leadership-based theories of organizational change, and is more appropriate for theorizing in complex social-political domains. This chapter looks at these dynamics of change

in a case of social innovation, and focuses on the question: what are the individual and collective processes of agency that catalyze systems change? By applying a positive lens, we enrich our exploration of the processes of agency that enabled system change to emerge.

This chapter describes the case of forest conservation in the Great Bear Rainforest, where the passion and purposeful action of individuals created conditions for greater social justice, sustainability, and community resilience. In the process, these individuals met circumstances that called forth their own transformation, which in turn supported their ability change relationship dynamics, and through this process, to enlist conflicted sectors into collaboration towards a shared vision. This group of actors and organizations successfully established a globally significant conservation agreement that protected 33% of the Great Bear Rainforest, caused a radical reorientation of forest policy and management regimes, raised conservation capital to support innovation in communities, and enshrined powerful new legal role for First Nations. After introducing the case, we frame it as an example of social innovation in a complex problem domain, emphasizing the phase of turbulent change (Westley et al., 2006). We describe six processes of individual and collective agency that led to innovation, drawing from socio-cognitive (Bandura, 2001, 2006) and sociological theories of agency (Emirbayer and Mische, 1998) to better understand these aspects of agency. We suggest that social change agency can be understood as a multi-level process of creating intentional change, where actors must attend to transformation at personal, interpersonal, and systemic levels in order to be successful. We identify positive dynamics at each of these levels, whereby individuals experience growth and harness compassionate motivation, which in turn supports generative relationships and new forms of problem-solving between actors in conflict, finally contributing to emergent, innovative solutions that support human development, and are more just and sustainable. We highlight some new lines of sight offered by the case, and propose future areas of research.

Conflict and Social Innovation in the Great Bear Rainforest

Forest Conflict on British Columbia's Coast

Heated controversies over the large-scale clearcutting of old growth forest – dubbed "the War in the Woods" – made headlines in the province of British Columbia, Canada (BC) for over a decade. The Great Bear Rainforest on BC's west coast was the largest unprotected coastal temperate rainforest remaining worldwide in the 1990s, and a coalition of environmental non-governmental organizations (ENGOs) was determined to protect it. Located between the Alaska panhandle and the northern tip of Vancouver Island, the 6.4 million hectares Great Bear Rainforest is about the size of Ireland, encompassing hundreds of intact valleys of temperate rainforest (Figure 11). About 22,000 people live in the Great Bear Rainforest, and it is home to the unique white 'spirit bear', grizzly bears, and cedars over 2000 years old. First Nations (aboriginal people) make up about half of the population, and the region includes the traditional territories of 25 culturally distinct Nations, who face a loss of languages and traditional cultures, serious social problems, and limited economic opportunities as a result of being excluded historically from the economic benefits of forestry, fishing and other extractive industries (Prescott-Allen, 2005; Smith, Sterritt & Armstrongt, 2007). During the period of conservation battles, First Nations were claiming rights and title over their traditional territories, and winning key battles against the provincial government in the Canadian Supreme court. The provincial government controlled the majority of land in BC, and granted long-term forest tenures to a handful of forest companies operating on the coast, in turn reaping logging fees (Wagner, 2001). Forestry was historically of vital importance to BC's economy, and the changing softwood lumber market had the coastal forest industry struggling.

Figure 11. Map of the Great Bear Rainforest area including Haida Gwaii, British Columbia, Canada.

Aware of looming controversy, in 1997, the province created a multi-stakeholder land use planning processes for the central coast region, and later the north coast, and invited stakeholders from all sectors to participate (Tjornbo et al., 2010). The process was undermined from the outset, as environmental organizations boycotted the process – labeling it as incapable of legislating meaningful conservation, and First Nations attended as observers, unwilling to be considered merely 'stakeholders' in an area they believed to be under their jurisdiction. In 1997-98, as the planning process proceeded, 13 rainforest valleys were roaded and logged, and almost every valley in the region was scheduled for clear-cutting within decades (Sierra Club of BC, 1999). A coalition of ENGOs consisting of ForestEthics, Greenpeace, the Sierra Club of BC, and Rainforest Action Network launched international and provincial campaigns to protect the Great Bear Rainforest. Their vision was of large-scale rainforest conservation, new forest practices, recognition of First Nations title and rights, and new sustainable economic opportunities for the region. Public and marketplace campaigns

targeted wood and paper products originating from endangered forest regions worldwide, using the Great Bear Rainforest as the 'poster-child'.

The ENGOs' campaigns fueled intense conflict between the forest industry, government, forest workers, First Nations and environmentalists in both the media and political arenas – but they proved to be powerful strategies in catalyzing change. Campaigns targeted customers of BC wood products in U.S., European, and Japanese markets worth roughly one billion dollars (Smith, Sterritt & Armstrong, 2007). Over 80 companies made commitments to phase out endangered forest products, including Home Depot and Lowe's, the world's largest wood retailers, IKEA, and Fortune 500 companies Nike, Dell and IBM (Riddell, 2009; Smith, Sterritt & Armstrong, 2007). Over $200 million in contracts were cancelled with forest companies logging in the Great Bear Rainforest, and German and US buyers registered concerns with the government and industry, signaling that a solution to the conflict had to be found. As a result of this financial pressure and the related controversy, forest companies operating in the Great Bear Rainforest entered into bi-lateral negotiations with ENGOs, and the province lifted restrictions so that ENGOs would agree to join official land-use planning processes.

Negotiations and Coalition-Building

In 1999, senior forest company representatives met, agreeing that they would redefine their approach to the coastal conflict and seek a negotiated resolution to the War in the Woods (Smith, Sterritt & Armstrong, 2007). Clearcut logging and markets campaigns continued, while the two sides found their footing in tense negotiations. A skilled facilitator, hired by forest companies, supported the negotiations. The ENGO leaders negotiating with industry were the same individuals who were leading the much-hated markets campaigns, and there was strong personal animosity on both sides. The negotiators on the ENGO side had faced threats of violence and backlash in the media and media and logging-dependent communities. The

premier of British Columbia had publicly labeled environmentalists as the "Enemies of BC" (Hoberg, 2001). Early negotiations were polarizing and uncomfortable, with environmental and industry representatives hurling bitter recriminations across the board table (Tjornbo et al., 2010). The industry negotiators were largely male, and had previous negotiating experience, whereas the women leading negotiations on the ENGO side had never undertaken such a role. During this time, ENGO leaders sought training and delved deeper into collective strategizing and visioning processes, as well as embracing new dialogue and learning approaches with their opponents (described below).

In 2000, after over a year of negotiations, the parties created a 'Standstill Agreement' whereby the markets campaigns would be suspended, and the forest companies agreed to a voluntary moratorium of logging in over 100 valleys, so future negotiations could proceed without battles in an atmosphere of 'solutions space'. The logging moratorium was an extraordinary milestone, as nothing like this, let alone on such grand scale, had ever been negotiated in BC – and certainly not without government involvement. The two sides had to 'sell' the agreement to government, First Nations, and the land use planning table, and endured significant backlash from rural mayors, forest workers and disgruntled members of their own camps when news of the agreement was leaked.

During this time of negotiations, coalitions were formalized both on the ENGO side (Rainforest Solutions Project - RSP) and the Forest Industry side (Coast Forest Companies Initiative – CFCI). After successfully negotiating the Standstill, CFCI and RSP created the Joint Solutions Project (JSP) as a structure for communication and further negotiations, and to advance dialogue with First Nations, the BC government, labor groups, and local communities. JSP became a venue for sharing information, discussing new policy and regulatory models, and problem solving (Smith, Sterritt & Armstrong, 2007). This ushered in an era of coalitions, where First Nations formalized their relationships with one another in the Coastal First

Nations alliance, and government and coastal communities also established vehicles for collaboration, experimental thinking and piloting new approaches.

Joint Solutions Emerge

In 2001, these multi-lateral negotiations led to a joint solutions framework, which maintained the logging deferrals and created new vehicles for knowledge generation, developing alternative management regimes, and supporting economic transition. The framework included an independent scientific panel – The Coast Information Team (CIT), which was set up to determine which areas needed protection, and how logging could take place in the region within the highest conservation standards. Parties agreed to embrace Ecosystem-Based Management (EBM) principles and goals, which are based in the recognition that healthy ecosystems form the basis of healthy communities and economies – representing a significant shift from the extractive industrial forestry mindset. They also agreed to pursue efforts at economic diversification away from natural resource extraction towards a 'conservation-based economy', which included a $35 million transition package for displaced workers, and the idea for a $120 million conservation investment fund. Finally the BC government and First Nations signed historic government-to-government protocol agreements with eight Coastal First Nations, acknowledging their shared jurisdiction.

Turning this framework into a substantive plan took five years, over a dozen committees, and thousands of hours of meetings (Smith, Sterritt & Armstrong, 2007). The CIT conducted ecological and socio-economic research, developed recommendations for the land use planning tables, and created a framework and guide for the new forest management regime. Individual First Nations pursued land-use planning, the Coast Investments and Incentives Initiative (CIII) was created as a joint initiative between the First Nations, ENGOs and government, with ENGOs taking the lead to raise $60 million of philanthropic capital for conservation investments. Pilot projects were initiated in Coastal First Nations communities to

apply new business concepts and EBM forestry. In 2004 the land use planning tables of the central and north coast came to consensus recommendations regarding protected areas and EBM forestry. In a parallel process, First Nations were completing their land use plans and preparing for government-to-government negotiations.

Finally, by February 2006, the final Great Bear Rainforest Land Use Decisions were announced, formalizing the multi-faceted new policies and legal agreements developed through ongoing collaboration. The final policy package represented a significant institutional shift to ecosystem-based forest management, with over 33% of the region (2 million hectares) protected from logging. New legal designations were created to allow First Nations cultural uses in protected areas. The conservation fund of $120 million was raised successfully, with half the funds supporting a permanent conservation endowment to finance ecosystem protection and management on public lands, and the other half to support ecologically sustainable First Nations businesses and economic development (Price et. al, 2009). Finally, in March 2009, after tough negotiations on EBM implementation, the full agreement entered into force – a startling example of system transformation whose full effects on the province of B.C. are still to be felt.

The final agreements are touted by all parties as a world-class example of positive change, conserving large areas of rainforest, enshrining a more just relationship with First Nations, supporting community economic development needs, meeting forest industry requirements for certainty, and alleviating conflict. The parties agree that such a multi-dimensional solution would not have come about without participation and input from such diverse coalitions of interest (Smith, Sterritt & Armstrongt, 2007). Inevitably, the parties involved continue to disagree on important aspects of implementation, and conflicts and competition for influence still characterize the policy arena, albeit in the context of these new institutional arrangements. As with all complex problems, change unfolds, the context shifts, and there is no true end to

the process.

Phases of Change in the Great Bear Rainforest Case

Social Innovation and the Adaptive Cycle

Social Innovation is an emerging concept at the nexus of change efforts in civil society, business, philanthropy, government, and the emerging "4th sector" of hybrid organizations, describing the myriad ways social and environmental value can be generated, and deep-rooted problems can be addressed. We define social innovation as *a product, process, initiative or program that profoundly changes the basic routines, resource and authority flows, or beliefs of any social system* (Westley & Antadze 2010). When a social innovation has a broad or durable impact, it will be *disruptive* - it will challenge the underlying system and institutions, changing the distribution of power and resources, and altering beliefs (Antadze and Westley 2010).

According to the definition, social innovation occurred in the Great Bear Rainforest in many ways. The positive changes that took place required disruptions in social systems and institutions, redistributions of power and resources, new forms of governance, and a revolution in the management regime and assumptions guiding forest practices. The new legislation and parks designations, combined with the EBM approach, may be the largest of its kind globally. It is also likely the largest such region to have aboriginal co-management and highly transparent and adaptive governance structures (Price et al, 2009). On a global scale, markets campaigns have shifted the ways that wood and paper purchasing occurs, ushering in new supply chain management regimes (Riddell, 2005).

One of the ways social innovation theory illuminates complex change processes is by applying the concept of the adaptive cycle. The adaptive cycle describes four phases of change in a complex system, and suggests that a given system cycles continually through these stages as it responds to fluctuations in the internal and external environment (Gunderson and

Holling, 2002). It provides a heuristic to understand processes of social innovation, because by understanding the rhythms of different cycles and influences across scales, it is possible identify points where the system can accept positive change, and to anticipate points of vulnerability (Holling, 2001; Westley et al., 2006). In this case, we apply the adaptive cycle to better locate and understand how phases of social innovation occurred and to analyze processes during each phase.

The four phases of change are depicted in Figure 3 below. The 'front-loop' of the adaptive cycle is a relatively stable phase of predictable, incremental growth where production and accumulation are maximized – moving from the *exploitation phase* where new configurations grow in the system, and competition for resources increases, towards the *conservation phase* where a mature system is sustained, with little flexibility. The 'back-loop' is an unpredictable phase of turbulent change and variation, where reorganization and invention are maximized, and transformative change is possible. This is characterized by the *release phase,* where the system undergoes a process of 'creative destruction' and structures, processes and/or function are disrupted. Changes release resources, dissolving the connection or coherence between existing systems parts. Dominant beliefs and understandings are called into question and novelty may emerge. In the *reorganization phase* which follows, a process of exploration and renewal occurs, enabling growth, resource accumulation and storage. Ideas and adaptations proliferate. The system then moves along the front-loop towards exploitation again. Adaptive cycles of change operating at different scales have been observed in ecosystems (Gunderson and Holling, 2002), institutions (Ostrom, 1992), societies (Westley, 1995), economies (Whitaker, 1987) and the production of scientific knowledge (Kuhn, 1962).

Using the adaptive cycle as a lens to interpret events in the Great Bear Rainforest case (Figure 12), different phases of change can be observed. In the ***conservation phase***, forestry institutions became increasingly brittle and locked-in, making them vulnerable to economic

pressures from changing markets and from the deliberately disruptive actions of environmentalists (numbers 1-3). Initially, conservative forces resisted change, but a release and reorganization was catalyzed by successful environmental campaigns and the changing status of First Nations, resulting in a loss of legitimacy for the status quo of forest policy and the beginning of a transformative back-loop. During the ***release phase*** (numbers 4-7), sectors had to overcome conflict and collaborate more closely, and environmental leaders experimented with new strategies to navigate change.

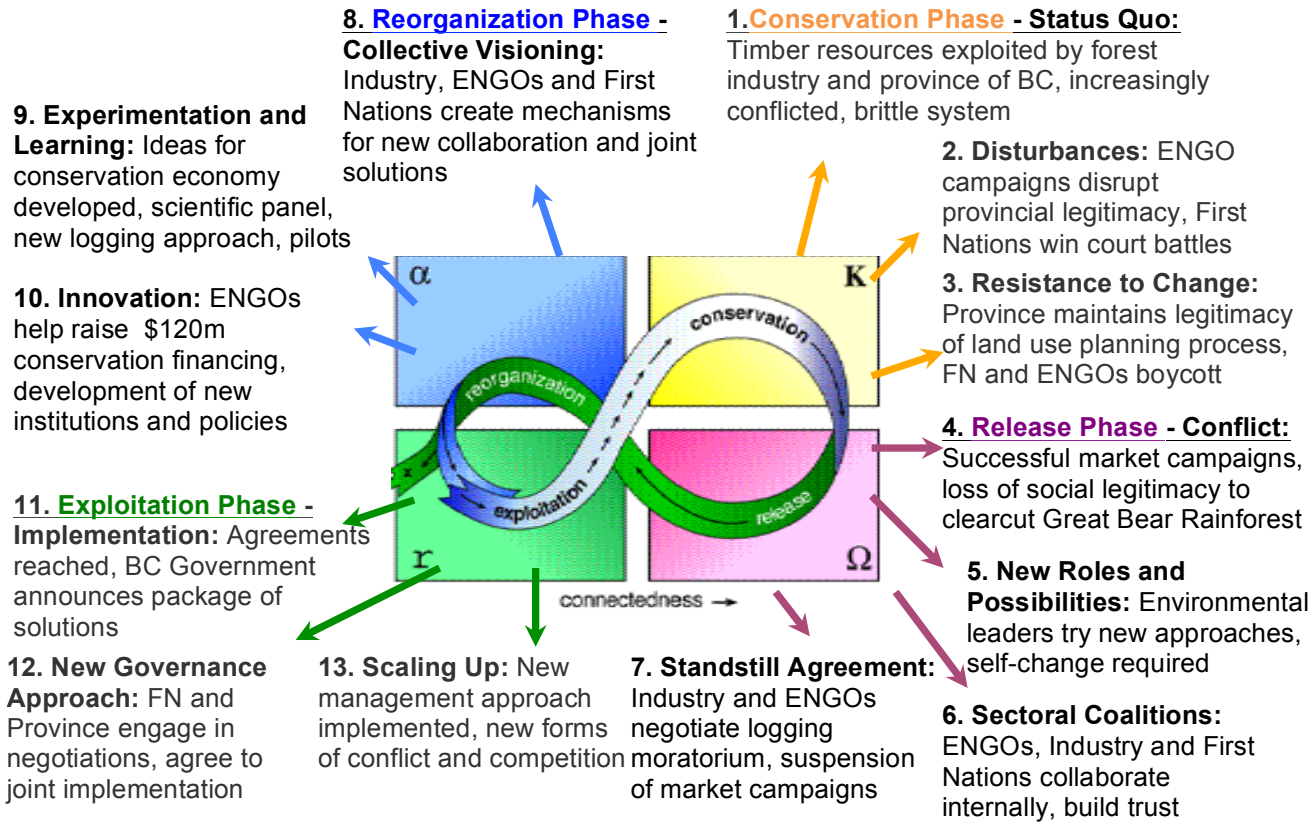

Figure 12. Adaptive Cycle in the Great Bear Rainforest Case. This figure describes the phases of change in the case, and highlights the 'back-loop' of turbulent change (numbers 4-10), from conflict, through negotiations, collective visioning, experimentation, and innovation.

The standstill agreement created a foundation for the ***re-organization phase*** (numbers 8-10), a time of experimentation and learning, where the building-blocks of the solution were generated including attracting new capital, creating political buy-in, and developing the economic, scientific/ecological, and human cases for change. New policy, economic, and

management mechanisms were developed and scaled up, leading to the ***exploitation phase*** (numbers 11-13), where the BC government announced a solutions package supported by all parties, new institutional arrangements with First Nations were established, and new battle lines were drawn between sectors as they jockeyed for position and power in defining implementation details of the complex new agreements. Of particular interest in this chapter is the phase of change through the turbulent back loop, when the system moved from conflict to innovation. The next section highlights the role of agency in this turbulent phase, and identifies six processes of agency that influenced systemic change.

Agency in the Great Bear Rainforest

Understanding Agency in Phases of Turbulent Change

While the adaptive cycle illuminates the phased process of social innovation and provides a lens for understanding the trajectory of change that took place in the Great Bear Rainforest, the cycle alone does not tell us how it was possible for such change to occur. We now look more closely at the agency social change actors expressed during the back-loop, from release to reorganization, to help move the system toward social innovation. Emirbayer and Mische (1998) suggest that upheaval stimulates particular aspects of agency, and have called for further research into how different aspects of agency are related to periods of stability and/or change. High levels of disorganization - manifesting as antagonism and open conflict, marked the release phase in the Great Bear Rainforest case. Despite the hostile environment, it was possible for the actors involved to build new partnerships and generate change. The lens of agency reveals dynamics across multiple levels (from micro-individual, to meso-relational/organizational to macro-systemic). Actors deliberately cultivated these dynamics to generate social innovation. What is also revealed is that many of the expressions of agency involved positive processes. The macro-process of social innovation in the Great Bear Rainforest led to positive outcomes for human and community well-being, increased justice

for First Nations, and more adaptive, sustainable forest practices and protection. The six micro- and meso-processes we have identified involve generative personal experiences, and the transformation of relationships from conflict to constructive engagement, which were framed as positive by the individuals involved. Taken together, these multi-level processes provide greater clarity into the kinds of individual and collective agency that are effective during times of turbulent change.

Social innovation concerns the interplay between intentionality and complexity and portrays change as occurring simultaneously at different scales. Because social innovators operate in fields of uncertainty, agency involves attending to and influencing the context in a manner that enables the success and extension of innovations. The agency involved in this kind of systems change has been described as institutional or systems 'entrepreneurship' (Garud et al., 2007; Westley and Moore, 2009). Many social innovators describe the paradox that wanting to change others means also accepting profound change in oneself (Westley et al, 2006). This self-transformation is dependent on learning and reflection, as an individual realizes how they are implicated by and participating in the system they seek to change. Bandura (2001, 2006) understands humans as both producers and products of their life circumstances, recognizing that agents and systems/structures are mutually dependent and co-evolving. Following Bandura we define agency as *intentional action to influence one's functioning and life circumstances or environment* (2001, 2006). Drawing on the definition of social innovation, we define social change agency as *intentional action to influence profound change in the basic routines, resource and authority flows, or beliefs of a social system*.

Bandura's socio-cognitive approach identifies key elements of agency, including *self-reflectiveness,* which is the meta-cognitive capacity to reflect on (and change) one's purposes, thoughts and actions, and *self-efficacy*, which is the belief that one has the power to effect change. Self-efficacy is a primary determinant of which challenges people will undertake, how

long they persevere in the face of obstacles, and how they interpret failure (Bandura, 2001). Bandura (2001, 2006) describes other elements of agency including *intentionality*, the formation of intentions and commitment to a course of action by individuals or collectivities, and *forethought*, the visualization of futures as motivators that provide direction, coherence and meaning to actions. Emirbayer and Mische's (1998) sociological conception of agency echoes these elements, and emphasizes the temporal nature of agency in its past (*iterational*), present (*practical-evaluative*) and future (*projective*) aspects. Emirbayer and Mische (1998) emphasize the importance of collective agency in responding to the structural and emergent demands of real-time problem contexts. *Collective agency* refers to the interdependent efforts of people acting in concert, pooling knowledge, skills and resources in order to shape their future (Bandura, 2001). Bandura's (2001) research suggests that groups with strongly perceived collective efficacy have higher aspirations and motivation, more perseverance, stronger morale and resilience to stressors, and greater performance accomplishments. Taken together, these elements of agency imply an array of positive or generative processes both individually and collectively, including individual reflection and transformation, establishment and maintenance of motivation, and perseverance in pursuit of a future vision. Below, we will explore how these processes of agency operated in the Great Bear Rainforest case, showing how social change agency operated at individual and collective levels, and ultimately led to broader systems change.

Six Processes of Agency

Many individuals played significant roles in generating the final agreements, however, it can be argued the social conflict over the region's fate was instigated by ENGO leaders, and they continued to advocate most strongly throughout the process (Riddell, 2005). Several sector representatives interviewed, including First Nations leaders, government representatives, and forest company executives indicated that it was the ENGO leaders' commitment and tenacity that maintained momentum toward the ultimate solution. For this

reason, and because early in the process ENGO representatives outlined a vision encompassing the central elements of the eventual solution package, it is instructive to look at the Great Bear Rainforest case through the lens of the agency expressed by the ENGO leaders. Other actors or sectors did not call for a solution of this scope, as they were generally looking for minor modifications of the status quo in their own interests (with the exception of the large-scale legal challenges of First Nations). It is clear that the agency of the ENGO leaders played a large role in enabling social innovation in this case, and that is where we begin.

Analysis of interview data in the Great Bear Rainforest case revealed six generative processes of individual and collective agency, that were critical to the transition from release to reorganization and innovation in the back loop: 1) creating powerful personal narratives; 2) humanizing opponents; 3) tolerating conflict and uncertainty; 4) focusing on solutions; 5) building an inclusive vision; 6) understanding the dynamics and psychology of change. While these processes interweaved, they also acted as emergent dynamics that allowed for the subsequent processes to build on them. Taken as a whole, these processes of agency describe the stages of the ENGO leaders' journey, beginning with three processes at the micro- level (self), which enabled shifting perceptions of others and new relationships to be forged with former opponents, developing into three meso-level (group/relational) processes enabling development of a broad vision for the region that became the touchstone for a system-wide change coalition, and a range of concrete solutions. These six processes demonstrate links between the micro level processes of individuals, meso-level group interactions and the macro-systemic context, and show that positive personal transformations gave rise to new relationships and laid the groundwork for system transformation.

Creating Powerful Personal Narratives

"what I am learning is that it is 'as above, so below' – everything is completely connected and we can't pull things apart from each other. My personal process is mirrored back to me

through this campaign, and the more that each of us does our personal work and integrates that into this broader campaign the more it becomes whole, and this whole journey has been about becoming whole, and it has been about finding peace." ENGO campaigner.

The ENGO leaders came to the negotiating table as political activists steeped in their sector's perception of the problems of the Great Bear Rainforest. However, in order to spark a social innovation they had to alter their perspective to encompass the concerns of the other actors. While environmentalists were committed to the idea of social justice for First Nations, there were conflicts when First Nations perceived that conservation was placed in opposition to human well-being and economic opportunities. First Nations leaders made clear to environmental leaders that any solution must address the realities their communities faced, including social dysfunction and up to 80% unemployment rates (Smith, Sterritt and Armstrong, 2006). Sierra Club of BC and Greenpeace campaigners went back to their respective organizations and initiated a mission statement change, reflecting the commitment to advance conservation and just resolution of First Nations rights and title simultaneously. Through such encounters the ENGO leaders engaged their self-reflective capacities (Bandura, 2006) and the campaign was experienced, among other things, as a journey of personal development. One campaigner described the Great Bear Rainforest campaign as a "crucible for personal development and transformation," and emphasized her sense of responsibility to future generations, "There was this intentional fusion of what does this mean to each of us individuals personally in terms of our life story. There is a story that is being created, what do we want to tell our grandkids about this, and tell them we were working for more than just saving the trees, we are thinking about how communities are going to survive, and we have to address this." This personal focus also led to a re-evaluation of their role in negotiations. Another campaigner had a breakthrough when realizing her power in negotiations did not come from being an 'ice queen', likening early negotiations to a battle where each side shot bullets and then hid behind riot shields, not letting any of their opponent's words hit them. In her previous role as a video producer and interviewer, she had an ability to open people up

and listen to their perspectives to gain deeper understanding. She resolved to integrate that part of herself into the environmentalist role, and began to make progress with her opponents.

Individuals underwent transformations as they developed emotionally meaningful personal narratives of the change they were seeking, reflecting on and re-evaluating their purposes and roles. This set the stage for the building of different kinds of relationships with other stakeholders. Instead of a battle of opposing and warring factions, the campaigners began to define their work as a journey of mutual discovery and understanding.

Humanizing Opponents

> *"Respect costs you nothing"* - ENGO negotiator.

> **"***Leaders who spent the time and care to understand interests and aspirations were much more able to envisage and achieve an outcome that could work."* - Representative of Environmental Foundation.

When individuals understood that their vision needed everyone's contribution, they began to see the humanity in their opponents, treating them with greater respect, compassion and curiosity. In an approach that became known, somewhat tongue-in-cheek, as "the Love Strategy", ENGO negotiators shifted their engagement with opponents, working to see them not just as enemies, or as corporate representatives, but as people. One negotiator says this originated from the strong caring relationships that existed between members of the ENGO team. This group participated in training retreats that emphasized negotiation, leadership and strategic skills and introduced campaigners to new approaches, including the idea of sourcing action from love, not anger or animosity. Over time, genuinely friendly personal relationships developed between some initial 'enemies'. This shift is described by one ENGO negotiator as moving from "not having a crack of compassion" to becoming genuinely curious, and when roadblocks in negotiations were hit, persevering and always 'digging deeper' to find solutions. This led to new conversations and new possibilities from what seemed to be impasses, "It's

about being curious…OK now we have to ask them a bunch more questions – "what is it the contractor needs?" and we really had to understand the consequence of what we were asking for and to understand it so that we could either defend our position or we could actually come up with ideas to try to mitigate some of the fallout." As ENGO leaders deliberately redefined and humanized their interactions with forest industry representatives, trust and engagement increased, and more information about the needs and interests of each group surfaced. This provided more material for solutions, but it also revealed additional grounds of conflict. Fortunately, the individuals involved and the relationships being cultivated were becoming resilient enough to absorb considerable increases in tension and uncertainty.

Tolerating Conflict and Uncertainty

"*You need to stay in that proximate place and engage.*" - ENGO negotiator.

With positive processes of self-change and relationship-building as the foundation, conflict could be made to serve the process of social innovation, rather than derail it. The lead ENGO negotiators identified the ability to sit in both conflict and uncertainty as being central to finding solutions. The external power the market campaigns provided was essential to creating an equal playing field of negotiations, enabling negotiators to engage in more powerful yet dialogical ways, maintaining their bottom line, but looking for alternative options. One negotiator described the challenge of sitting in conflict: it was uncomfortable to have people angry at her, but she deliberately cultivated a sense of staying anchored and empowered, noticing but not giving in to, the urges to run away, lash out, or compromise in order to be liked. One strategy she used to stay engaged through conflict included being very frank with company executives, explaining positions and counter-moves they could anticipate from more radical members of the coalition ("good cop-bad cop tactics"). This ability to remain empowered while in conflict was generative, enabling participants in the negotiations

process to focus on gaining more information about the situation, to learn together, and to look for alternatives.

Another ENGO negotiator described how fruitful it was for her to learn to be comfortable in uncertainty. "My natural tendency up until that point had been to find what's wrong. It is so much more challenging to find what is right, or to make right". She gradually learned to accept her own internal feelings of conflict and 'stuckness' for long enough to allow new alternatives to emerge. This practice also helped her to be patient and allow collaborative processes to remain stuck until there could be collective learning, without bypassing the important experience of uncertainty, and the natural resolutions that emerged from this experience.

The first three processes of agency (creating new narratives, humanizing opponents, building tolerance for conflict and uncertainty) reveal many generative micro-dynamics of self-development and transformation that were key to moving creatively through the release phase of turbulent change. In this case we see how this process began by transformations in personal identity and meaning making but grew to include a transformation of relationships. Dominant beliefs and ways of interacting were called into question, and new generative patterns of interacting emerged. Here we can see how individual social change agency was expressed first through self-development and then through enlisting others in a change process – linking individual agency to collective agency. In terms of the adaptive cycle, this allowed the problem domain to move from the release phase to a reorganization phase. This in turn gave rise to the emergence of an integrated vision and concrete and innovative solution building activities.

Building an Inclusive Vision

> *"This campaign felt more whole, it felt healthy, that the best of each of us was being mixed into it, and the best of us was being asked for…The questions that were being asked within this campaign and the ways we were building it were much bigger and broader."* - ENGO campaigner.

The ENGO leaders' vision was founded on a belief in people's capacity to create a better future for the benefit of the whole. The personal work that ENGO leaders did supported effective action, in service of this larger goal: "The most effective leadership was egoless – people who were most effective were less concerned with their role or the perception of their role and more about the big picture or the big outcome we were working for". This founding ENGO commitment to the health of the whole rippled out into a compelling narrative in the Great Bear Rainforest Campaign. Later, when First Nations challenged ENGOs to 'put their money where their mouth was', they tried something never done before – and successfully raised $60 million in private philanthropic capital to invest in conservation-based economic development on public lands. It became clear to those involved that solutions would require a vision of profound change that addressed many sectors' concerns for the region.

This greater collective vision and the strong personal identification with it created a powerful sense that anything was possible (self- and collective efficacy, Bandura 2001), and people were motivated to create innovative approaches to accomplish the vision. One campaigner in particular is credited with fuelling this efficacy belief, and she was able to build confidence of the ENGO team over time – in their ability to create the future, to "pull rabbits out of hats", and to accomplish the previously unthinkable. One of her colleagues reports that, "a lot of people have begun to believe it…it is a mystique, and we still have it 10 years later". She described it as building up a "powerful intentional field", and that, "After a couple of times doing the impossible, discovering that it was possible against the odds, this built on

itself." She gave the example of the creation and strong outcomes from the CIT science panel, which ultimately called for 44-70% rainforest protection, saying, "we never would have predicted we could accomplish that". This sense of the possible expanded over time to include other sectors, and was referred to in terms that conjure the presence of a supportive field, a "mystique" supporting success. One of the Foundation representatives reflected on the power of the founding vision created by sector leaders pursuing conservation financing initiatives (the CIII):

> I looked over the diagram we made during the original brainstorm, and it's remarkable how much actually came to pass 8 years later. For me, there were a number of pivotal CIII discussions, when the deputy minister of the Premier looked at the dialogue papers, and said, if we could actually pull this off, it would be magic. And, this word over 5 years became a touchstone for the discussions - are we really creating the magic?

One of the forestry executives observed that nobody had the power to force anyone to agree to a vision, and "this new path forward, is uncertain, but we have to believe in it - there's a whole thing about believing which is hard to articulate…you have to believe that you have the power as an individual and within your team, to achieve the goal that you set out." It was described as "alchemy" by one of the forest industry leaders, bringing together forces, and coming up with innovations between them that could never have been done alone. By deliberately co-creating an inclusive and positive vision, ENGO leaders invited broad participation and a powerful sense of collective efficacy.

Focusing on Solutions

> *"We realized we needed to keep driving the solutions forward, and we needed a forester, an economist, scientists, we needed professionals to help us design solutions so we stayed one step ahead of everybody."* - ENGO leader

The shift in role from campaigner to negotiator required ENGO leaders to embrace a new mindset as architects of change, and invite others into that mindset. While the ENGOs successfully initiated change through their campaigns, they realized that the path to solutions required a maturation of strategy. Instead of demanding that others change, ENGO leaders took the onus upon themselves to "figure out the path", consciously shifting tactics to deepen their analysis of the obstacles facing forest companies and communities. In negotiating the Standstill Agreement, tenure agreements and obligations to contractors required creative solutions, and ENGOs participated with industry in generating novel approaches to get around policy and contractual obstacles. This focus on solutions also became a hallmark of the work done across sectors in bi-lateral coalitions. For example, a Foundation representative who was collaborating with ENGOs described his role: "I was focused on process so that all the relevant actors were moved along, with the endgame in mind, and also building the institutions to oversee investments and ensure tools we were bringing to table had viable delivery vehicles, for example the Coast Opportunities Fund, which could continue to grow, evolve and add more benefit over time."

Through the coalitions, negotiations processes, and other institutional vehicles that were established, sector leaders within the ENGOs, forest companies First Nations, foundations, and government began to work out the elements of the solution. Several pilots were initiated as proving grounds for new ideas generated from the CIII, on EBM, and co-management, which built people's belief in the new approach. One of the ENGO negotiators stated, "It is very holographic, you don't have to make the change at the largest scale – the whole idea of piloting – the ripple effect is profound." In the reorganization phase of the adaptive cycle, new innovations occur through a combination of experimentation, partnerships and new ideas joined together. We have seen how this was made possible by positive processes of trust and engagement engendered by personal transformation during the release phase. Mutual understanding and tolerance for conflict allowed for the surfacing of the diversity necessary

for building innovative solutions. Finally, an inclusive vision created the space and capacity to move solutions into new institutional arrangements. Equally interesting, however, from the perspective of understanding social change agency, is the fact that the first five processes unfolded within a growing and strategic awareness by participants that understanding the psychology and dynamics of change in itself contributed to facilitating change.

Understanding the dynamics and psychology of change

> *"Humans always require drama when changing underlying belief structures else they fall back into the old patterns. They need an excess of pain, joy, strong emotion, or new experience, to impress the change upon the dull recording medium between their ears."* Asher, 2010, quoted by ENGO negotiator.

The Great Bear Rainforest conflict raised high levels of emotion on all sides, as it called into question people's deep beliefs about the purposes of society and what constituted moral action. One campaigner shared her recognition of the emotional experience of exclusion experienced by the forest industry when they were targeted as destructive 'bad guys'. She observed that "humans don't want to be excluded, and they don't want to be bad. They needed to hear us say "there is a place for you, you can be gold-star good."" This accompanied the shift towards discussing *how* and *where* logging might take place, as opposed to an outright logging ban in old growth. She observed that this process took time (about 5 years), and though at first the companies were pushed into participating in the solutions structure, over time they recognized that the region was of global significance and that they *could* do things differently, culminating in them proudly taking joint credit for the solutions package.

ENGO representatives intentionally cultivated the role of drama and conflict in the process of human change and politics (including among their own allies). Upon reflecting on the success of the campaign, one ENGO leader quoted Asher (2010), above, and described the deliberate use of both rational and irrational tactics to create this sense of drama in order to

facilitate change. Environmental campaigners strategically engaged different aspects of their identity – from the threat of direct action groups protesting and hanging banners, to strategic suit-wearing and inclusion of economists, professional foresters, and MBAs on their team. The campaigner observed, "I think a lot about the psychology of change. This is not about policy. You want to know how to be a change agent? It is how humans change psychologically that you have to master." Another way the ENGOs successfully harnessed and influenced the psychology of change was by advancing the Coast Investments and Incentives Initiative. First Nations, forest company executives and senior government officials have all acknowledged the shift in perception that occurred when environmental leaders initially delivered $9 million in seed funding for the CIII, and then quickly raised their half of the $120 million dollar fund from private donors in Canada and the US. It was surprising and compelling to have ENGOs delivering tens of millions of dollars to support community transitions and calling on government to match their contribution – not the least because it became difficult to dismiss them as economically naïve or self-interested.

Summary and Conclusion

This paper analyzed the individual and collective actions of key leaders, and used a positive lens to understand processes underlying social change agency, particularly during periods of turbulent change. The narrative arc that the data presents is one of positive, system wide changes emerging from personal transformation, through transformed group relationships to system wide transformation. The ENGO leaders first disrupted the current system through the markets campaign and helped to trigger a release phase. This created a phase of turbulent change bringing the forestry industry to the table. However, with mistrust and animosity at very intense levels, the challenge was to keep all players there long enough for innovative solutions to emerge. The individual and collective processes of agency that led to solutions involved positive processes of self-reflectiveness and transformation, motivation, relationship building and persevering in pursuit of an inclusive future vision. Strong

individual agency expressed in these positive processes gave rise to collective agency, forging a powerful coalition of shared action. Both conflict and collaboration were hallmarks of this process of emerging innovation and change.

The markets campaign got the ENGOs to the negotiating table with the forestry industry and ensured that they were taken seriously. However, when they got there the two sides were adversaries and it would have been easy for negotiations to deadlock. Instead, the individual ENGO negotiators underwent a period of self-reflection and redefined their expectations for the system (Bandura, 2001), developing powerful personal narratives. This transformation was triggered by their encounter with First Nations, which encouraged ENGO leaders to shift from their role as traditional environmental activists. Their own process of change, and their deep bonds of trust in each other in turn led to a re-evaluation and transformation of their perception of forest industry opponents, through the "Love Strategy". By humanizing their opponents, they turned a phase of uncertainty and conflict into a generative space for solution building. Such work required the joint effort of all of the major actors in the system and was motivated by the ENGO leaders' ability to communicate and co-create an inspiring vision of success and potential for all the region's major players. The strong self-efficacy of environmental leaders built on successes and led to a collective sense that this vision was possible. Finally, a conscious cultivation of the psychology and dynamics of change was a critical part of social change agency. The data demonstrates that while some of the success depended on a complex series of opportunities and dynamics far removed from the negotiations, the intentional expression of positive forms of agency, spread from environmental leaders to other sectors, enabled the emergence and the flowering of generative relationships and innovative solutions.

This process incorporated activities such as vision building, sense making, and collective learning, which led to the development of new collaborations and innovations that helped to

transform the system. In this way, a close analysis of the Great Bear Rainforest case corroborates other findings in social innovation theory (Westley et al., 2006). This data also shows that successful social change agency in the release and reorganization phase involves the positive micro-processes of self-transformation and profound changes in relationships. These six processes of agency enabled collective social change agency to emerge and guide solution-building. This analysis highlights how personal change engendered positive outcomes, allowing the conflict and confusion typical of the release phase to give way to a positive alliance for change. It also helps to enrich social innovation theory by answering the question of how individual agents are able to enact more abstract strategies such as sense making, visioning, and collaboration during times of turbulent change.

These positive processes involved ENGO leaders' recognition of the limits and narrowness of their own perspective on the system, and active efforts to overcome these limitations both by incorporating the perspectives of other groups, and by including parts of their own persona that were being neglected. This shift in perspective allowed them to create new roles for themselves in the system. Moreover, there was an active effort to transmit this change to others partly by using a compelling vision of change, and partly by being sensitive to the perceptions and internal changes taking place in other actors. Such hard-won perspectives, when linked to opportunities presented by the larger system dynamics, resulted in positive social and ecological outcomes. Through these forms of generative, intentional action, individuals were able to "be the change" they wished to see in the world.

In the Great Bear Rainforest, social change agency played a crucial role in navigating a complex change through a period of disruption, to allow for the emergence of a collective process of innovation and solution-building. Although structural forces shaped the evolution of this process, they did so in relation to individual and collective agency, which both responded to and acted to direct these forces. By incorporating a socio-cognitive perspective

on agency, this case highlights how individual and collective processes of social change agency advance efforts to create profound systems change. Social change agency can therefore be understood as a multi-level process of creating intentional change, where actors must attend to transformation at personal, interpersonal, and systemic levels in order to be successful.

Further Research

This has been an exploratory chapter, where we engage the neglected topic of the co-emergence of individual and broader system transformation in response to complex problems, specifically during times of turbulent change. More research is needed to describe these micro-meso-macro interactions, to understand the role of social change agency in social innovations, and to further illuminate the positive dynamics underlying change at different scales. We have drawn on social-psychological theories of agency and applied them to a case of social innovation, but it should be seen only as a first step in this direction, and the authors hope that more systematic studies can be conducted in the future. Such studies would further explore social change agency as a multi-level process of creating intentional change in complex systems, deepening our understanding of linkages between personal, interpersonal, and systemic change. Further research could also describe in more detail the interlinked processes of individual and collective agency, and the role of positive dynamics in developing and extending social change agency. Specifically, studies could ask questions about the importance of the individual capacity for accepting conflict and uncertainty (especially its' primary role during the 'back-loop' of turbulent social change) and how this relates to self-perception, personal power, self-efficacy and perseverance/resilience (Lichtenstein and Plowman 2009). They would also look at the importance of the humanizing dynamic observed in this case, including shifts in perception towards architect of change from advocate or agitator. What are the dynamics underlying this change, how is it fostered (what conditions/contexts) and how does it spread from individual to collective form? Further

research is also warranted on the role and dynamics of vision in its individual and collective forms, and how this may strengthen social change agency. Finally, in exploring all these questions, we anticipate, based on the findings of this paper, that the role self-transformation may play a more important role in social transformation than has been previously thought.

Chapter 5: Mutual Reinforcement Dynamics and Sustainability Transitions: Civil Society's Role in Influencing Canadian Forest Sector Transition

Human activity has created intertwined crises including massive wealth and development gaps between north and south, poverty and hunger, erosion and desertification of agricultural areas, loss of biodiversity, and the twin challenges of peak oil and global climate change. These linked environmental, equity and development challenges above have given rise to the concept of sustainable development, and its companion concept, sustainability (WCED, 1987; Robinson et al., 1990). Sustainability problems will require fundamental transformations in societal systems from global to local scales (Gunderson and Holling, 2002; Rotmans & Loorbach, 2008), and in particular, will require changes to major resource industries. The forest sector is one of the largest industries in the world, with pulp, paper and solid wood markets spanning vast supply chains. Canada is the world's largest exporter of forest products (NRCAN, 2011), and the transition of this sector towards sustainability contains important lessons for those scholars and practitioners interested in catalyzing change to address the worlds' most complex social-ecological challenges.

The field of sustainability transitions is a strand of sociotechnical transitions theory that addresses the dynamics necessary to advance fundamental industry transformations towards sustainability, with an emphasis on the development and scaling of niche-level innovations (Frantzeskaki, Koppenjan, Loorbach & Ryan, 2010; Geels, 2010; Grin, Rotmans & Schot, 2010). Sustainability transitions studies addresses the need to transform unsustainable industrial regimes, highlighting the reinforcing interactions between economic, technological, social, and cultural dimensions and the pathways by which new innovations can be introduced and spread. Additional research is needed to discover more about how deliberate actor strategies can influence the complex problem domains involved in sustainability transitions (Grin et al.,

2011). In particular, the coordinated strategies of networks of global civil society actors and non-governmental organizations (NGOs) have yet to be considered at any length in sustainability transitions literature. This area of inquiry is critical because of the distributed, global-local nature of sustainability transitions - in particular those dealing with climate, energy, food, and resource extraction industries.

This chapter analyzes forest sector transition in Canada and specifically the strategic agency of transnational civil society actors in catalyzing major policy shifts towards sustainable forest management, conservation, and greening of the global supply chain for forest products. This is partially a response to calls to better understand the politics and agency involved in sustainability transitions (e.g. Smith, Voß and Grin, 2010). Literature on sustainability transitions has also begun to look at role of civil society organizations, but largely in the context of grassroots or community-based initiatives. Drawing on the multilevel perspective (MLP) (Geels, 2005; Geels and Schot, 2007) and the transitions governance approach (Grin, 2010), I analyze the strategies of transnational environmental non-governmental organizations (ENGOs) in two cases of forest sector innovation: the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreements (CBFA). My research questions are: *How did the strategies of transnational environmental actors encourage sustainability transitions in the cases of the GBR and CBFA? And, what does analysis of environmental actor strategies contribute to the understanding of agency and multi-level interactions in sustainability transitions theorizing?*

In this this chapter, I find that: 1) environmental actors deliberately generated reinforcing pressures within the regime that interacted between cultural, markets and policy domains to cause disruption in locked-in forest regimes; 2) pressures on regime actors were also generated through distributed "landscape leverage" strategies involving proxy agency, whereby a global network of environmental actors mobilized other actors to convert landscape trends into a loss

of cultural legitimacy and financial threats; 3) Niche development was spatially distributed and largely non-technical, involving the creation of new markets for certified forest products at the global level, and the creation of domestic policy-focused negotiations where firm actors proactively engaged with environmentalists to create and test innovations in sustainable forest management; and finally 4) environmentalists orchestrated mutually reinforcing dynamics (Grin, 2010) across landscape, regime and niche levels over time by mobilizing collective and proxy agency (Bandura, 2006),to generate regime openings and landscape leverage, and by co-creating niche innovations. This resulted in sustainability innovations being institutionalized through the Great Bear Rainforest Agreement and to a lesser extent through the Canadian Boreal Forest Agreement.

This research contributes new insights about the unique strategies transnational environmental actors undertook to influence Canadian forest sector transition towards sustainability, in particular the important role of socially mediated or proxy agency in generating landscape leverage to encourage regime transition. My findings from these cases also suggest that for sustainability transitions theorizing, the focus of innovation must extend beyond technological niche protection and scaling, and beyond the role of governance and policy actors in bringing about sustainability transitions, to take seriously the roles of non-state actors, in particular networks of global civil society networks and transnational firms. Furthermore, the due the distributed sphere of influence of non-state actors, new forms of multi-level influence need to be depicted within the MLP, and the landscape concept must be endogenized within the model to account for actors' long-term strategic agency.

Conceptual approach

Sociotechnical transitions theory and the multi-level perspective

Sociotechnical transitions literature analyzes trajectories of socio-technical systems development, and the emerging literature on sustainability transitions aims specifically to

generate new knowledge about deliberate interventions to re-structure systems along more sustainable trajectories. *Sociotechnical systems* are clusters of elements including technology, regulations, user practices and markets, cultural meanings, infrastructure, and supply networks. *Transitions* are defined as transformation processes in which society or a complex subsystem of society changes in a fundamental way over an extended period (more than one generation) (Rotmans et al., 2000, quoted in Kemp and Rotmans, 2004:138). Transition refers to a deep structural transformation from one dynamic equilibrium state to another, caused by co-evolutionary processes. Technology is the focal point for organizing transition efforts, within a co-evolving institutional context (Geels, 2010). The sustainability transitions approach connects to broader sustainability discourses by addressing how to break technological and social "lock-in" of existing unsustainable regimes, and speed the uptake of environmental innovations into society (Markand and Truffer, 2012). Recently sociotechnical systems approaches have expanded beyond their historical focus on market-based technological innovation to look at the broader variety of niche innovation processes that can drive sustainability and address related climate change, ecological, and energy challenges.

The *multi-level perspective* (MLP) is a conceptual framework that depicts interactions between innovative practices (niche experiments), industry/problem domain structures (sociotechnical regimes), and long-term, exogenous trends (the socio-technical landscape) (Schot, 1998; Rip & Kemp, 1998; Geels, 2005). The MLP posits functional and temporal levels of increasing structuration where macro-processes are slower (more structured), meso-processes are faster (less structured), and niche-processes are fastest (least structured). *Niches* generate agency, new practices and norms, and radical innovations, and are structured by incumbent sociotechnical *regimes* (Geels, 2005; Kemp, Schot and Hoogma, 1998; Rotmans et al. 2001). According to the MLP, the *landscape* provides the broader structural context for niche–regime interactions, and includes social values, policy beliefs, worldviews, political coalitions, the built environment, prices and costs, trade patterns and ecological influences (Kemp and

Rotmans, 2004). Landscape processes, political or otherwise, are considered to be exogenous, bearing down on regimes through interpretation or translation by actors (Geels, 2005; Geels and Schot, 2007), generating stress and creating opportunities and acting as a stability landscape that provides "gradients for action" (Rip and Kemp, 1998). Landscape processes may reinforce locked-in regimes or generate disruptive forces that make adoption of novel niche technologies and practices more likely (Geels and Schot, 2007). Transitions occur when niche technologies or innovations are taken up by the regime in response to co-emergent opportunities or disruptions. Niche innovations succeed when broader selection environments (regime and landscape) are favorable. In addition to creating protected niches, strategic actors can take advantage of windows of opportunity (Geels and Schot, 2010) and can co-determine what landscape tendencies are mobilized, neglected or circumvented (Grin, 2010; Rotmans and Loorbach, 2010). The concepts in the MLP, and specifically the transition trajectories resulting from interactions between levels, can be used to highlight different leverage points to tip systems towards sustainability, in particular through reinforcing patterns of influence, or agency (Geels, 2011).

Agency and mutually reinforcing dynamics across levels

Actors influence sociotechnical transitions through their agency, which affects whether, how, and how fast a transition may develop (Grin et al., 2011). The challenge framed through a sustainability transitions perspective is how to create reinforcing political dynamics that can change the balance of power and legitimacy away from incumbent (unsustainable) practices and towards sustainability (Grin et al., 2011). In the governance approach to transitions, Grin (2010) proposes that policy actors can advance "constructive interference" between levels, to orchestrate the process of mutual reinforcement between niche, regime and landscape levels and create opportunities to re-structure regimes. The ability to connect and mobilize mutual alignments is characterized as a "distributed competence for strategic agency", whereby actors can extend their agency by connecting with one another, and by viewing issues from a meta-

perspective that perceives both immediate opportunities and limitations, along with wider patterns in space and time (Grin, 2010). Three aspects of agency are involved in orchestrating mutually reinforcing transitions towards sustainable development: 1) envisioning and advancing novel practices at the niche level; 2) opening up new institutional structures in relation to regime and landscape constraints/opportunities; and 3) sustaining ongoing connection between novel practices and new institutional structures to create a cycle of mutually reinforcing change (Grin, 2010). In other words, agents make structural change and innovative practices relate to one another, and have the power to block or emphasize various structural influences to advance innovation (Grin, 2010). While this description of agency was intended to apply to policy actors, I am interested here in how other kinds of actors can enact such constructive interference between levels, in particular how outside actors within distributed networks such as environmental activists work to shift discourses and power around issues of sustainability and create political impetus for transition. How might such actors open up new institutional structures in relation to opportunities and constraints in the regime and landscape level, and create a cycle of reinforcing change?

Bandura (2006) identifies three modes of agency, which may shed further light on how diverse actors who do not hold formal political power can nonetheless deliberately orchestrate change in structures that are far beyond their direct control. Bandura (2001, 2006) defines agency as *intentional action to influence one's functioning, life circumstances or environment*. Through cognitive self-regulation, humans can create visualized futures to act on the present - constructing, evaluating and modifying courses of action to override environmental influences (Bandura, 2006). Yet, the agency of many people is required to affect the character of broad, interlocking sociotechnical systems. Bandura distinguishes between personal, collective and proxy agency (2006, 165-166). *Personal agency* is expressed individually when people directly influence their own functioning and environmental events. *Collective agency* refers to the interdependent efforts of people acting collectively, pooling knowledge, skills and resources in

order to shape their future. Finally, *proxy agency* is socially mediated, when people do not have direct control over an outcome but are able to influence others who have knowledge, resources, or means to act on their behalf. When distributed structures are the focal point of change, such as in sustainability transitions, actors must go beyond personal expressions to engage interdependently in collective efforts, and to mobilize and influence others at a distance, via proxy agency. Bandura's (2006) description of collective and proxy agency has not been investigated in the sustainability transitions literature, but may have resonance with Grin's notion of distributed competence for strategic agency. These two approaches to agency are applied to two cases of forest sector transition in Canada, specifically to answer the question of how diverse actors orchestrated work across levels in distributed ways in order to open up institutional structures and mobilize the resources and political support necessary restructure them along more sustainable trajectories.

The role of civil society actors in regime transition

Some theorists acknowledge that sustainability transitions have special characteristics wherein it will be crucial to understand the role of social movements in advancing the discourse, socio-political framing, and debate involved in transitions (e.g. Geels, 2010, 2011). However, Smith et al. (2010) point out that the majority of transition studies have focused on competitive, market-based innovations, rather than the socio-technical alternatives that may be emerging from civil society activism or political movements. There are calls in transitions research for more attention to the politics of sustainability transitions (Smith and Raven, 2010), the role of consumers (e.g. Shove, 2003; Spaargaren, 2003) and community-based sustainability initiatives (Seyfang and Smith, 2007). In response, recent studies have examined how grassroots organizations seek to influence innovation processes from the outside (Elzen et al., 2011), and the role of cultural legitimacy in aiding the adoption of new innovations (Geels and Verhees, 2011). Work on grassroots innovation has emphasized not just shielding and nurturing work to foster adoption of innovation, but also the niche empowerment aspect, whereby grassroots

environmental or civil society actors actively cultivate political and discursive dynamics that encourage adoption of innovations into a regime (Geels and Verhees, 2011; Seyfang and Smith, 2007; Seyfang and Haxeltine, 2012; Smith and Raven, 2012). Intermediary organizations that straddle boundaries between levels by creating shared infrastructure, coordinating activities, and aggregating knowledge are also seen as important for active path-breaking activity (Geels and Deuten, 2006; Hargreaves et al., 2013). By connecting multiple isolated niches, intermediaries can expand their influence, thereby translating multiple regional niches into a 'global niche' - a field or community where shared rules and practices can take root and grow (Geels and Raven, 2006; Raven et al., 2008, 2010). Beyond this notion of a global niche, the coordinated strategies of networks of global civil society actors and non-governmental organizations (NGOs) have yet to be considered at any length in sustainability transitions literature. This area of inquiry is critical because sustainability transitions are both global and local, and challenges such as climate change, or unsustainable, agriculture and resource extraction regimes by their very nature transcend national levels of governance.

Globalized supply chains and integrated markets span multiple regimes, regions and jurisdictions - for example in food, energy, and natural resource markets. Attempts to govern or deliberately cultivate sustainability transitions will benefit from attending to the role transnational actors play in both blocking and driving changes. For example, a network of social or environmental activists can advance global level change through bottom up (community-level) *and* top-down (international) engagement with transnational actors – i.e. in particular with global firms, but also through global agreements and other governance arrangements that transcend the national scale. National policy can be perceived as slow to deal with issues that are global in scale, and increasingly transnational actors such as those in firms are collaborating with civil society actors to address sustainability challenges outside of formal governance structures - both proactively or reactively as a result of campaigns. For global companies, addressing sustainability transition issues directly with NGOs can enable

them to capture new markets, and in some cases can pre-empt piecemeal domestic rules and even inform more comprehensive policy responses (Pattberg, 2012). Such is the case with market-based mechanisms and voluntary standards, such as Fair Trade, Forest Stewardship Council, and other global certifying and standard-setting bodies, which drive changes in market behavior towards sustainability, and also influence domestic policy.

Areas for Conceptual Development the MLP

In addition to the need to understand how actors can deliberately cultivate reinforcing transition dynamics across levels, and in particular how civil society networks and other global actors might pursue strategies to advance (or resist) sustainability transitions, this research engages with several theoretical gaps concerning agency and the dynamics and mechanisms of sustainability transitions across level in the MLP. These gaps concern three key areas: 1) the need to understand how to harness interactions between cultural, markets and policy dimensions of the regime towards sustainability, 2) the role and actor strategies involved in interpreting landscape pressures in ways that are salient for incumbent actors and lead to change; and 3) descriptions of the varying environmental innovation activities that occur in niches, beyond the development and shielding of new technologies.

First, at the *regime level*, the MLP framework does not identify substantive mechanisms to describe the interactions between society, culture, technology, markets and politics that make transitions possible (Geels, 2011). These interactions across the different sub-domains within a regime can either encourage lock-in, or provide opportunities for the regime to be more responsive to innovative potentials. How and where regime actors directly express agency or construct such interactions between society, values, markets, politics and technology is under-theorized within the MLP.

Second, the *landscape* concept is problematic due to its status as "exogenous", within an otherwise constructivist theory (Geels, 2002; Geels and Schot, 2007). The landscape refers to the highly structured and continuously evolving "selection environment" consisting of societal values, macro-economic and ecological patterns, demographic trends and political ideologies, which is considered to be exogenous because it is outside of direct actor influence in the short term (Geels, 2011, p. 28). The MLP depicts no mutual influences between niche and landscape levels, emphasizing bottom-up change from protected niches to the regime level (Berkhout et al., 2004). Similarly, the MLP does not indicate direct regime influence upon the landscape until a new regime is established, after transition occurs. Despite this lack of mutual interaction between the landscape and other levels depicted in the MLP, actors are said to have the ability to "interpret" landscape trends and "co-determine" what landscape tendencies are translated, mobilized, neglected or circumvented, and in what way (Geels and Schot, 2007; Grin, 2010; Grin et al., 2011). There is little description of the actor strategies or agency by which this interpretation, translation, or mobilization might occur, and it is unclear where or between what levels in the MLP this agency might operate.

There are several problems with this conception of the landscape. First, the landscape is created out of a hybrid of evolutionary economics and social constructivist epistemologies and process concepts. It is consistent with evolutionary economics for the landscape to be an exogenous 'placeholder' of unintentional technical, material and market aggregates and demographic and ecological trends, which then acts as the context and selection environment influencing regime and niche functioning. Yet from a social constructivist perspective, it is theoretically inconsistent to consider any aspect of a social system as 'exogenous' to human agency, when social systems are imbued with, and co-structured by, agency at every level. Giddens' structuration theory (1984), which Geels refers to as a basis of the MLP (Geels, 2010; Geels and Schot, 2007), describes how structure, rules and agency interact and mutually reproduce one another at *all levels* of structuration.

The current depiction of the landscape level also renders invisible the impact of long-term deliberate agency, when that must actually be the focus of transition efforts. Viewed from a sustainability transitions lens, the landscape is where the symptoms of unsustainable regimes are externalized, and the purpose of understanding transitions is to both internalize *and* deliberately influence those aggregate, long-term climate, ecological, social and economic trends that make up the sustainability crisis. The MLP then becomes a problematic heuristic for understanding transition because no time period wherein longer-term strategies of actors may have direct influence on landscape trends is suggested. An example of long-term strategies aimed at landscape trends might be deliberate social marketing attempts to shift broader cultural values about something such as smoking, or international efforts to increase women's access to education and birth control in an effort to lower population increases. Civil society actors may also employ discursive strategies to re-interpret or re-construct the *meaning* of landscape-level demographic, macro-economic and ecological patterns.

Diverse regime actors construct very different interpretations of the landscape's selection environment, depending on what trends they identify as being most salient to their values or operational concerns - i.e. some macro-influences are perceived by actors as more "real" than others. Some landscape trends may have virtually no influence until they are made relevant or salient through translation to regime actors. Examples of this include the sudden perception by a firm of a given demographic trend because it represents critical market opportunity, or regulators or firms becoming compelled to respond to a scientifically well-established negative ecological trend such as loss of biological diversity because of a new report or a public awareness campaign. In this way, landscape trends are continuously constructed and reconstructed according to actor and institutional values, and the circumstance. Actors seeking sustainability transitions must necessarily engage in deliberate restructuring of landscape-level ecological and social trends, and there are currently no concepts within the

MLP for analyzing such activities, especially by outside actors such as those in civil society or social movements.

The third gap in the MLP's applicability to sustainability transitions theorizing is the emphasis on the role of niches for developing technological novelty, and a lack of explicitness in the literature how niches actually compete with and transform incumbent regimes (Smith, 2007; Smith and Raven, 2012). Conceptualization of niches must broadened beyond protected spaces where technological innovation is advanced by technical experts or entrepreneurs, to look more broadly both at *what* the innovation is and *who* is advancing it. The niche level can then be understood as the site where many kinds of social innovations may emerge, which can be products, processes, practices, platforms, or combinations of different innovative elements (Westley and Antadze, 2010). Niche innovations critical to advancing sustainability can be market-based, social, technological, policy-focused and more. In order to analyze transitions more fully, analysis must also go beyond looking at niche-development activities of policy or technology actors to describe the agency of those acting on behalf of firms, civil society organizations and consumers to initiate and spread innovative practices.

The Case Study: Global and Canadian Forest Campaigns 1993-2013

Overview

In this section I summarize two related cases of innovation in the Canadian forest industry - the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreements - which came about as part of a twenty-year process of marketplace transformation driven by the deliberate international campaigns of environmental non-governmental organizations (ENGOs) and their networks. The global forestry regime extends from forest ecosystems to the consumer, and includes resource management and trade policies, industrial paradigms and practices, market institutions and standards, technologies for extracting and producing forest

products, and diverse experiences of the cultural significance of forests, forestry and forest products. Since the mid-1990s, a global network of forest activists has advanced innovative campaign strategies linking regional and global scales in order to protect endangered forests and transition forest regimes towards more sustainable practices and policies. Canadian forest campaigns have been a focal point that have both driven global strategies and benefited from the creation of new global platforms such as the Forest Stewardship Council (FSC). The section below first describes the two macro-strategies of "markets campaigns", and third party FSC certification, and then describes how these were mutually influenced by Canadian forest conservation campaigns and the eventual creation of the Great Bear Rainforest Agreement (GBRA) and Canadian Boreal Forest Agreement (CBFA).

Globalized forest campaigns

ENGO campaigns to protect global forests exemplify a pattern observed by global governance theorists, wherein social movements have increasingly responded to unsustainable resource extraction and regime lock-in at domestic or state levels by moving to international governance contexts and partnering with more powerful NGOs (Keck and Sikkink, 1998; Sonnenfeld, 2002). This is particularly so when they are seeking to influence transnational corporations and markets, as in the case of the forest industry (Bernstein and Cashore, 2010; Gritten and Mola-Yudego, 2010). As the extent of global forest destruction became apparent in the 1970s and 1980s, public concerns grew over impacts of deforestation, clearcutting, loss of biodiversity, and effluent from pulp mills (Gereffi et al., 2001). ENGOs developed market-based strategies in the mid-1990s in direct response to the inability of nation-states to protect social and environmental interests from increasingly globalized and under-regulated forest products markets. This coincided with creation of the Forest Stewardship Council (FSC) - a third-party certifier of sustainably managed forests and supply chains of wood and paper products. ENGO forest campaigns became distinctly effective because they combined different strategies and easily shift between places and scales, in

response to the challenge of globalization (Miller and Martin, 2000). Globalized ENGO forest campaigns generate leverage through cultivating strategic alliances with brokers and intermediaries and manipulate their opponents' range of action through local-to-global coalitions and networks (Affolderbach, 2011). Additional tactics include the use of non-violent direct action to stop or restrain industrial actors, consumer boycotts, public education and lobbying (Affolderbach, 2011).

Focusing on global trade and consumption enabled international ENGOs such as Greenpeace and WWF, which have broad communications and campaign reaches, to connect unsustainable consumption patterns in northern industrialized countries to unsustainable resource extraction in less regulated states. These international ENGOs have focused on three dimensions in their attempts to change forestry regimes with an array of tactics from radical to conciliatory: 1) work to shift the practices of forest companies and impact global supply chains through boycotts and markets campaigns; 2) the development of third-party Forest Stewardship Council certification for forest products; and 3) work directly at the national level to influence domestic forest policies and share lessons internationally (Bernstein and Cashore 2007; 2010).

Market-focused campaigns aimed both to shift global supply chains and to change forest management in particular regions. Through markets campaigns ENGOs critique products and production practices, seek to reduce sales of controversial products, and attempt to build markets for environmentally or socially responsible products (O'Rourke, 2005). Campaigns also aim to shift market demand away from controversial 'endangered forest' hotspots, and advance innovations in sustainable forestry – through changing practices, implementation of ecosystem-based management and adaptive governance approaches, and legal designation of protected areas. Campaigns led by Greenpeace, Rainforest Action Network, and ForestEthics began targeting high profile, highly branded corporations in the mid-1990s (e.g. Nike and

other Fortune 1000 companies), as well as leading brands in key consumption sectors: Home Depot and Lowe's, the world's two largest solid wood and lumber retailers, Staples and Office Depot in office paper, Victoria's Secret and L.L.Bean in the catalogue market, and Scott Tissue and Kleenex brands. Environmentalists pursued chain of custody research to target sector-leading companies, large consumers, and brands with perceived vulnerabilities to campaigns. Consumer boycotts and media campaigns are launched against the big brand company, calling on them to stop purchasing from 'bad actor' forest companies. Campaigns therefore acted to frame and amplify existing ethical concerns held by grassroots activists and consumers, in order to influence the behavior of purchasing companies, while also influencing consumer preference more broadly through distributed grassroots protests, and media shaming 'bad actor' companies that show visual, compelling images of wilderness and wildlife such as grizzly bears, "Spirit bears" and caribou.

Brand-focused market campaigns are referred to as "blanket campaigns", because they focus on all aspects of a company's operations, targeting a firm's global financial partners, as well as shareholders and investors (Gritten and Mola-Yudego, 2010). Once leading firms in a sector have succumbed to campaigns and adopted more sustainable buying practices, their competitors in the same sectors are targeted. Through this concerted effort, powerful market actors are mobilized to grow the market for wood and paper products originating from sustainably managed forests. Market campaigns therefore act as a vehicle to speed the adoption of FSC-certified products, as well as increasing global market demand for recycled fibres and alternatives such as bamboo, straw and agricultural waste. Most importantly to activists working on regional campaigns, they create intense pressure on targeted forest companies and governments, who suffer contract cancellations, shareholder pressure, and negative media unless they adopt more sustainable policies and practices.

Forest certification – creation and advancement of FSC

In 1993, the Forest Stewardship Council (FSC) arose as the first third-party certification system in international markets, after the global convention on forests failed to be ratified (Bernstein and Cashore, 2010). Led by Greenpeace and WWF, its creation was intended to curtail logging in endangered forests and advance new rules and practices. FSC has core principles guiding 'on the ground' operations, and requires chain of custody tracking. It has three representative chambers: social, economic and environmental. Governments are not represented. FSC certification created binding and enforceable rules to advance sustainable forestry practices, effectively acting as a private form of international governance, deriving authority directly from participating firms, NGOs and other interested parties, and not from sovereign states (Cashore, 2002; Bernstein and Cashore, 2007). Since 1993, Sustainable Forestry Initiative (SFI) and Canadian Standards Association (CSA) have emerged as industry-friendly certification schemes aimed at challenging FSC, but it remains the sustainable brand of choice for the global network of ENGOs engaged in market campaigns, and is seen as the most environmentally and socially credible certification.

Certification has been described as an institution that has transformed power relations in the global arena by linking diverse (sometimes antagonistic) actors across local, national and international levels to govern firm behavior in a global space that had previously eluded the control of states and international organizations (Gereffi et al., 2001). It is a noteworthy example of how non-state actors have organized to create a global level of governance to advance sustainability outcomes without any formal government participation. The power of certification to influence regimes is potentially significant. Bernstein and Cashore (2007) report that current certification systems operate in sectors that represent one-fifth of the products traded globally. The Forest Stewardship Council is the oldest and one of the most successful forms of such of third-party certification (along with Organic and Fair Trade labels) (Pattberg, 2012). While competing industry-sponsored certifiers CSA (Canadian Standards

Association) and SFI (Sustainable Forestry Initiative) had greater volume, FSC was winning the public relations battle – becoming a preferred choice of values-sensitive European markets, and coming to dominate the global certified paper market. While FSC was intended primarily as a mechanism to address tropical deforestation, its uptake has been much greater in northern countries, with Canada leading the way. By 2008, Canada had more FSC-certified land than any other country – at 25% of the world total, and 25 million hectares (NRCAN, 2008). One reason for this high rate of certification is that the Canadian forest industry has been subjected to intensive scrutiny for its unsustainable forest practices through ENGO markets campaigns, in particular those focused on Canadian rainforests of Clayoquot Sound and the Great Bear Rainforest, and the vast northern boreal forest.

Transition and transformation in Canadian forest regimes

Canada leads the world in exports of lumber, pulp and newsprint, but is also one of only three countries in the world, along with Brazil and Russia, with significant amounts of intact forestland remaining (Bryant, Nielsen, and Tangley, 1997). The forest industry has historically been a crucial part of Canada's resource economy, both through export earnings and in its role sustaining jobs in small isolated communities. Canada's forest products exports comprise 1.8% of the overall GDP and almost 12 percent of the manufacturing GDP (NRCAN, 2011). This export dependency, especially to the United States, has made the industry vulnerable to economic upheavals. The Canadian forest sector has also been affected by the rise of competition from fast-growing southern plantations, and growing competition from other materials (FAO, 2011). Along with changing labor and regulatory pressures globally, these dynamics have caused significant change in the structure of the Canadian forest sector. Many in Canada consider that the last decade has been the worst crisis in the forest industry's history, with mill closures, poor financial returns, and enormous job losses. In the year 2000 the Canadian forest sector supported 367,400 direct jobs, and by 2010 this had declined to roughly 200,000 (NRCAN, 2011). Partially in response to these declines, the industry has been

pursuing an agenda of diversification by investing innovative forest products such as bioenergy and biochemicals, targeting emerging markets, and seeking competitive advantage for Canadian forest products in global markets.

Canada's forestlands are 93% publicly owned and are administered by provincial authority through long-term tenures, making certainty of access a primary concern for companies with cutting rights. Provincial government, company, and union interests interlock into powerful regimes where incumbents' benefits include government income from taxation and 'stumpage fees', industry export income and subsidies, and high-paying union employment in remote but politically influential regions. The dominant forestry paradigm emphasized streamlined regulation, high yields, and mechanization – with logging undertaken by vertically integrated companies who owned rights to the trees, mills, and export infrastructure. Historically, forestlands were managed intensively with clearcutting as the predominant logging practice. As part of the industrial forest management paradigm, the rate of cut was set high to enable "forest normalization" - liquidation of ancient forests, and their replacement with even-aged stands that would grow with factory-like precision on short-term rotations. Parks creation often occurred in areas less desirable to industry, or in places with aesthetic beauty but little biodiversity and few economically valuable forestlands. This fuelled community-based and environmental protests across Canada, and a so-called "War in the Woods" which pitted environmentalists against the incumbent forestry regime (Stanbury, 2000).

The environmental movement increased its focus in the 1990s on global forest product markets and forest certification, which enabled them to connect local forest struggles to wider work on market transformation. In Canadian forests, conservation struggles took the form of communities protesting clearcutting, landslides, fresh water and fisheries impacts. Environmental activists blocked roads, and First Nations launched rights and land title

challenges in efforts to stop the industry from liquidating old growth forests (Stanbury, 2000). With government, firms and environmentalists all looking for a way to go beyond "valley-by-valley" conflicts, comprehensive multi-stakeholder land use planning gained political favor in the 1990s in some Canadian provinces. Yet, these multi-stakeholder forums simply reproduced existing regime structures, and were unable to shift the underlying paradigm of extractive forestry or unlock the regime from an unsustainable trajectory. Citizen's and environmental organizations continued to struggle to change the forest industry.

In BC, the high profile failure of land use planning in Vancouver Island's Clayoquot Sound catalyzed more than ten thousand Canadians to protest, resulting in massive civil disobedience and arrests in 1993 (Stanbury, 2000). When government could not be persuaded to stop clearcutting in Clayoquot's last intact valleys, environmental leaders took their message internationally. Greenpeace and their allies followed the trail of logs and money to big brand name companies that were buying forest products from Clayoquot, creating the first markets campaigns against forest products. This involved threatening to boycott the brands of Scott Paper and Pacific Bell telephone for destroying Canada's ancient rainforests to make toilet paper and phone books (Berman, 2011). These brands cancelled contracts with the forest company operating in Clayoquot, which caused the company to stop logging and engage in negotiations directly with environmentalists – something ten thousand protesting Canadians had been unable to accomplish. Within several years, negotiations led to the main forest company in the region announcing it would stop all clearcutting in ancient rainforests and protect the remaining unlogged valleys, and the Clayoquot Sound Scientific Panel was established to apply new conservation and ecosystem-based management principles (Stanbury, 2000).

Clayoquot Sound marks the invention and first notable success of global markets campaigns. Scott Paper and Pacific Bell cancelled contracts and provided ENGOs with

unprecedented leverage to negotiate directly with companies to change their logging practices. Negotiations also included increasingly powerful First Nations, and eventually the government came to the table as well, agreeing to protect endangered forests, and enact new policy. This model has been scaled up, honed and repeated across Canada and internationally by markets campaign groups such as Greenpeace, Rainforest Action Network and ForestEthics. After Clayoquot Sound, this coalition of ENGOs expanded their international and provincial campaigns northward to protect the last significant remaining coastal rainforest in BC – an area of over seven million hectares that environmentalists christened "the Great Bear Rainforest". Their campaigns continued to targeted wood and paper products originating from endangered forest regions worldwide, but simultaneously used Canada's Great Bear Rainforest as the 'poster-child' example of bad practices in order to encourage consumer boycotts and contract cancellations. A twenty-year timeline of these campaigns is shown in Table 4, below.

From 1994-2000, markets campaigns to protect the Great Bear Rainforest met with increasing success. Campaigns targeted customers of BC wood products in U.S., European, and Japanese markets that were worth roughly one billion dollars (Smith, Sterritt & Armstrong, 2007). Hundreds of millions of dollars worth of contracts were cancelled with forest companies operating in BC's coastal rainforest (Riddell, 2009). During this time, over 80 companies made commitments to phase-out endangered forest products, including Home Depot and Lowe's, the world's largest wood retailers, IKEA, and Fortune 500 companies Nike, Dell and IBM (Smith, Sterritt & Armstrong, 2007). German and US buyers visited government and industry representatives to express concerns, signaling that a solution to the conflict had to be found. Due to this financial pressure and the related public controversy, forest companies operating in the Great Bear Rainforest entered into direct bi-lateral negotiations with ENGOs, bypassing the provincial government process that continued to resist significant regime change. Both sides negotiated a 'standstill agreement' whereby ENGOs would stop

their market campaigns and forest companies placed over 100 valleys in a logging moratorium so they could enter solutions-oriented negotiations over the fate of the region. This 'solutions space' was a deliberate, protected venue wherein environmentalists and company executives could redesign the forest regime by drawing on new knowledge and innovative practice.

Date		Events
1993	Clayoquot Sound conflicts FSC founded	Clayoquot Summer: 10,000 people protest and over 800 arrests Forest Stewardship Council established First markets campaigns launched in Europe, US and Japan.
1994 - 1995	Markets campaigns expand	Scott Paper UK cancels BC contracts, PacBell calls for change in Clayoquot Industry officials visit European customers, host visits to BC forests Clayoquot Science Panel recommends Ecosystem-based principles
1996-1997	Great Bear Rainforest LRMP and campaigns begin	UK, Europe and US marketplace blockades and actions by ENGOs, increasing customer concern about coastal old growth clearcutting Industry and ENGO polarization and conflict escalates in media BC government implements Forest Practices Code and launches Central Coast LRMP. ENGOs boycott process, First Nations act as "observers"
1998 - 1999	GBR ceasefire Boreal ENGO campaigns begin	Environmentalists labeled "Enemies of BC" by premier German delegation visits GBR, demands parties find solution Home Depot Announces new sourcing and 'endangered forests' policy 1999 - Standstill agreement in GBR defers logging in 100 valleys & market campaigns Boreal Campaign begun and several provinces announce Boreal land use plans
2000	Joint Solutions Project in GBR	Joint Solutions Project (JSP) formed between GBR companies and ENGOs Forest Products Association of Canada founded
2001	GBR Land Use Announcement	First Great Bear Rainforest Land Use announcement, government and First Nations protocol signed, independent science Coast Information Team established
2002-2003	Boreal campaigns begin	Greenpeace and ForestEthics research and initiate Boreal market campaigns Boreal Framework Agreement reached among energy and forest companies, First Nations, ENGOs and investment firms, aims for 50% protection of ecosystem
2004-2005	GBR planning continues Species at Risk Act	Central and North Coast LRMPs make consensus recommendations, EBM handbook developed, JSP makes protected areas recommendations Province of BC & First Nations Government-to-Government agreements Canadian Species At Risk Act becomes law, 2005
2006	Boreal campaigns GBRA legislated	Victoria's Secret/Limited Brands cancellation Boreal forest contracts Great Bear Rainforest Land Use Planning ratified/legislated, commit to full EBM implementation by 2009 with milestones Coast Opportunities Fund established to raise $120 million in GBR
2007	Boreal Conflict, exploratory conversations	Market campaigns continue, companies receive customer letters of concern Informal conversations scope negotiations between FPAC and ENGOs 2007/8 Woodland Caribou National Recovery Strategy FPAC Announces Climate Neutrality goal for 2015
2008	CBFA negotiations formally begin	Mediator/facilitator engaged by ENGOs and FPAC Agreement to pursue negotiations between ENGOs and FPAC
2009	Boreal Deferrals & Negotiations	April 1, 2009: Logging deferrals set aside 28 million hectares (98%) of Boreal caribou range in FPAC member tenures, ENGOs suspend "do not buy" campaigns.
2010	Concluding negotiations CBFA signed	Final CBFA Caucus coordination, side agreements negotiated, milestones developed and communications agreements reached May 18th CBFA public announcement, six goals and milestones
2011 - 2013	CBFA Implementation Phase	CBFA advances milestones, faces funding and capacity challenges Greenpeace (Dec. 2012) and Canopy (April, 2013) withdraw from CBFA EBM guidelines finalized for Great Bear Rainforest (2013/4)

Table 4. Twenty-year timeline from Clayoquot Sound to the CBFA, 1993 - 2013.

The parties shifted from the dominant assumptions of industrial forestry to adopt ecosystem-based management principles and a human well-being index that radically reframed the incumbent management regime. In negotiations, forest companies agreed to high levels of conservation, and committed to pursue Forest Stewardship Council-certified logging in the remaining areas in order to meet stringent management requirements. First Nations and government also eventually participated in negotiations, and the resulting multi-lateral agreements were advanced through the official multi-stakeholder land-use planning process for the region. In 2006, the province announced the Great Bear Rainforest Land Use Decisions - representing a significant institutional shift to ecosystem-based forest management, with over 1/3 of the region (more than 2 million hectares) protected from logging. New legal designations were created to allow First Nations cultural uses in protected areas, and a conservation fund of $120 million was established to finance ecosystem protection and support sustainable First Nations businesses (Price et al., 2009).

As the need for market-place pressure in the Great Bear Rainforest receded, in 2002, ENGOs redirected the leverage generated by markets campaigns towards the vast and largely unprotected Boreal forests in Canada's north. Canada's Boreal forest is the world's largest intact area of forest and wetlands, about 310 million hectares in size, encompassing the traditional territory of about 150 First Nations. The Boreal forest contains over one million lakes, is the breeding ground of billions of migratory songbirds, and is home to the iconic and endangered woodland caribou. More than 208 billion tons of carbon are stored in the Boreal forests trees, soils, wetlands and peat - equivalent to 26 years' worth of global greenhouse gas emissions. The Boreal was an important fibre source for the Canadian industry, and by 2005, 45% of Canada's northern forests were allocated to industrial development, with new allocation plans pending in Ontario, Quebec and Alberta - provinces with large tracts of forest.

Pulp derived from the Boreal forest was sought after by big brands in the magazine and paper industry, including Victoria's Secret lingerie, and Kleenex tissues. Greenpeace targeted Kimberly-Clark's Kleenex brand through their *Kleercut* campaign and ForestEthics targeted Victoria's Secret and their popular mail-order lingerie catalogues. Victoria's Secret mailed one million catalogues per day, sourced primarily from Canadian Boreal old growth pulp (Berman, 2011). The "Victoria's Dirty Secret" campaign featured a newspaper "subvertisement" of a bustier-clad woman wearing Victoria's Secret trademark angel wings and holding a chainsaw, calling on the company to stop destroying forests. Protests occurred in Victoria's Secret stores around North America, and the company's tightly managed brand was under attack. In 2006, Victoria's Secret's parent company, Limited Brands, declared they would stop buying Boreal-sourced pulp. At this point four of the eight major operators in the Boreal forest were facing campaigns against their products, and the entire Canadian brand was at risk in the marketplace.

Canada's federal government had introduced a Species At Risk Act, which became law in 2005, requiring caribou recovery to plans be implemented in each province, and at the same time, several provinces were advancing land use planning processes for the Northern Boreal region. Together these policy initiatives would subject companies to a new patchwork of policies. The Forest Products Association of Canada (FPAC), who represented 21 of the largest forest products companies in Canada, had been greening its image and pursuing forest certification and ambitious carbon reduction strategies in light of the increased market scrutiny placed on the Canadian industry due to ENGO campaigns. Facing over a decade of poor financial returns, FPAC and its member companies were motivated by the opportunity to gain competitive advantage by branding Canadian wood as ecologically sound. The industry was also aware of the impacts that climate change could have on the valuation of forests, and their increasingly important future role both as carbon sinks and energy sources. They began to perceive the benefits of proactively engaging sustainability issues in partnership with the

environmental community.

In 2008, FPAC and 21 forest companies, encompassing virtually all of the Canadian forest sector entered into interest-based negotiations with a coalition of 9 ENGOs to solve their conflicts and identify innovative solutions to protect species and manage forests more sustainably. In April 2009, a cease-fire agreement was reached, where companies voluntarily placed more than 28 million hectares of caribou habitat in logging deferral, representing 98% of the caribou range in FPAC member tenures, and markets campaigning ENGOs agreed to suspend their 'do not buy' campaigns. Over the next year, the parties negotiated the six goals of the Canadian Boreal Forest Agreement (CBFA), resulting in its announcement in May 2010. Touted as the "largest conservation agreement the world has ever seen", the Canadian Boreal Forest Agreement (CBFA) was signed to position Canada's Boreal Forest as a world-class model for sustainable forest management and conservation. It encompassed 72 million hectares of public forests licensed to FPAC member companies (which later rose to 76 million hectares (FPAC, 2013). Agreement goals would advance world-leading forest practices (to exceed FSC standards) and land protection, support recovery of Woodland Caribou and other species-at-risk, reduce greenhouse gas emissions, improve forest sector prosperity, and create marketplace recognition for CBFA signatory companies (CBFA, 2010). The Canadian Boreal Forest Agreement Secretariat was create as a joint governance body to advance these goals.

The CBFA did not involve the active participation of First Nations across Canada - largely because there was no comprehensive governance body to engage, and because the undertaking was felt to be far to complex by the parties, given the presence of more than 150 individual First Nations, Metis and aboriginal groups with overlapping territories and differing legal rights across Canada. The intent of ENGO and company signatories was to forge the CBFA first bi-laterally, and then based on this common agenda to seek collaboration and new legislation with both provincial governments and First Nations governments across

Canada. However, upon its announcement, the Agreement met with significant First Nations opposition.

For large parts of the CBFA's intent to be accomplished, governments in seven jurisdictions must legislate new land use designations, and create new protected areas. The Agreement is still in the early stages, and the full systemic impact is not yet known, due to its complexity and short history. However, as of the three-year anniversary in 2013, no endangered forest had yet gained formal legal protection. In the latter part of 2012, and early 2013, two of the three markets campaigning groups left the Agreement (Greenpeace and Canopy), due to slow progress in meeting milestones and the failure to legally designate new protected areas. The remaining signatories are maintaining their support for the Agreement, but it has faced difficulties in funding and gaining political outcomes from the outset. In spite of this, the signatories to the Canadian Boreal Forest Agreement have maintained the moratorium on logging in caribou habitat, and have adopted new practices and collaboration processes that seek to enshrine their goals into law.

Discussion

Overview

In both the Great Bear Rainforest and the Canadian Boreal Forest environmentalists were successful in disrupting the stability of forestry regimes and introducing innovative sustainability practices and new institutional arrangements. The Great Bear Rainforest Agreement resulted in wholesale transformation in the laws and informal processes governing the regional forest regime, while the Canadian Boreal Forest Agreement has yet to be fully implemented. The CBFA has resulted in voluntary commitments from the majority of the Canadian forest sector to advance sustainable forest practices and greenhouse gas reductions, commitments to third-party certification, and a moratorium on logging in caribou habitat, as

well as empowering the Canadian Boreal Forest Secretariat to influencing pan-Boreal governance across seven provincial jurisdictions.

Forest campaigns advanced by Canadian and international ENGO actors were complex, transnational, employing multiple tactics and diverse partners – illustrating what Grin et al. (2011) refer to as distributed competence for strategic agency. Grin (2010) describes how actors can orchestrate mutually reinforcing strategies by 1) envisioning novel practices, 2) opening up new institutional structures in relation to regime and landscape opportunities and constraints, and 3) sustaining ongoing connection between novel practices and new institutional structures to create a cycle of regime changes towards sustainability. Below, I describe strategies environmentalists pursued across regime, landscape and niche levels to generate mutually reinforcing dynamics - disrupting the regime and driving transition towards a more sustainable forest regime. In these cases, ENGO actors' attention was not initially on the development of niche-level practices. Instead, they focused first on amplifying opportunity structures at both regime and landscape levels by generated reinforcing cultural-discursive, financial and political pressures on regime actors. Below I describe these interacting opportunity dynamics and pressures between domains that led forest industry and policy regime actors to adapt to changing public expectations surrounding sustainable forest management and incorporate innovative practices and policies. ENGO actors working with a transnational coalition broke regime lock-in by creating and capitalizing on reinforcing market, political and discursive opportunities. Simultaneously, ENGOs mobilized 'landscape leverage' in an ongoing way to select, frame, amplify, mobilize and translate landscape pressures onto the regime to encourage sustainability transition. Global forest campaigns dovetailed with forest certification structures, empowering new global and local practices of sustainable forest management. At regional and national levels, ENGO and forest company leaders created protected niches - 'solutions spaces' - where negotiations would enshrining new policy and

practice. Below, I describe in more detail these reinforcing dynamics across regime, landscape and niche levels.

Multi-domain regime disruption strategies

Geels (2011) points out that the MLP does not identify substantive mechanisms to describe the interactions between society, culture, technology, markets and politics that make regime transitions possible. The GBRA and CBFA cases illustrate how interactions between these domains within a regime can be harnessed to open up transition possibilities. ENGOs pursued strategies that focused on exploiting and growing cultural values in support of sustainable forest management, and directing these values through markets campaigns to create both financial and political pressures on regime actors. Tarrow (1998) refers to the opportunities and constraints facing social movements due to co-emergent institutional dynamics as "political opportunity structures" - institutional conditions that may enable or block political and regulatory changes being advocated for by social movement actors (also see Elzen et al., 2011). A similar "industry opportunity structure" has been defined (Den Hond and De Baaker, 2007) related to economic, organizational and cultural features that constrain or enhance the ability of firms within an industry to change their behavior, including for example, cost structures, level of competition, market opportunities and customer preference.

Both opportunity structures point to the role culture, discourse and norms play in creating institutional readiness for change. In these cases, the regime was out of step with broader cultural values that caused consumers and shareholders to respond negatively to narratives of forest destruction being caused by disposable products. Geels and Verhees (2011) describe this as the cultural legitimacy surrounding an innovation, and show how cultural legitimacy combines with the industry environment and regulatory environment to determine how and whether an innovation will be adopted into a regime.

ENGOs in this case advanced sustainability transitions by building on and creating new political and industry opportunity structures, primarily by creating linked discursive and financial pressures. I refer to these coordinated efforts to disrupt different parts of the regime as *multi-domain strategies* to cultivate opportunity structures. Activists judged the provincial political domains where responsibility for forest governance resided to be locked-in. However, by targeting the broader supply chain of forest products they were able to generate new disruptive pressures onto firm and regulatory actors by targeting the business environment. This involved campaign efforts to revoke cultural legitimacy to generate both financial threats from boycotts and material damage from contract cancellations. Mobilizing these threats required both collective agency, in the form of collaborative action with networks of ENGOs and activists, and more significantly, a distributed network of actors using their proxy agency to influence forest policy in distant arenas (which I describe in more detail in the section below on landscape leverage). A complex chain of proxy actors were engaged to pressure forest companies to enter into innovative land use Agreements in the Great Bear Rainforest and Canadian Boreal. This chain included media channels that communicated campaign messages, concerned public and consumers who joined campaigns against large purchasers of products from contentious regions, and the targets of corporate "blanket campaigns" - financiers, shareholders, investors and company executives. When large corporate targets adopted sustainable forest procurement policies or cancelled contracts with Canadian forest companies, their proxy agency influenced the financial performance of forest companies, and threatened the 'social license' or cultural legitimacy of the status quo forest industry.

In order to build up these new forms of collective and proxy agency, for a time ENGOs de-emphasized domestic political advocacy work, and focused instead on cultivating green consumer values globally using campaign messages and organizing tactics, in turn using campaigns to amplify the financial pressure being felt by the Canadian forest industry as a result of broader changes in forest products markets. The economic and political consequences

of public and markets campaigns eventually spilled over to influence decision-makers, who presided over increasingly illegitimate forest policies and situations of social conflict. The social and political conflict was highly public in the case of the Great Bear Rainforest, whereas because the boreal forest industry entered into secret negotiations earlier with ENGOs, forest company executives experienced reputational and marketplace threats, but conflict was largely contained between ENGOs, forest companies, and actors in the international marketplace.

Orchestrating reinforcing regime dynamics

Global market campaigns fed into growth of Fortune 500 favoring FSC, and expansion of the area of forests in Canada managed according to certified third-party standards (Environmental Paper Network, 2013). More significantly, they resulted in the cancellation of contracts between large procurers and forest companies operating in contentious areas. Global forest and markets campaigns mobilized cultural and consumer values in support of 'green' forest products, and acted as a financial threat/incentive to the Canadian forest industry and policymakers. Campaigns destabilized the forest regime, first by catalyzing debate and revoking cultural legitimacy, which generated financial consequences to firms, and opened up industry opportunity structures.

In the early stages of both the Great Bear Rainforest and the Boreal conflict, government and industry associations invested in costly public relations battles against ENGOs international market campaigns and devoted large amounts of senior leadership time responding to the threat of boycotts and brand damage. Markets campaigns increased the risks to firm executives and government representatives of maintaining existing regime arrangements. In the case of the Great Bear Rainforest, powerful First Nations with unceded constitutional land rights allied with environmentalists to transform the forest industry in the region. The pressure on forest companies spilled over onto other regime actors including the

government who was regulating and dependent on stumpage income. In the Boreal, firms were convened through the Forest Products Association of Canada to determine whether they wanted to engage in negotiations with ENGOs or pursue an international public relations battle. While they initially chose to do battle, this decision was revisited and the 21 companies entered into formal negotiations to make substantial changes in forest management, develop innovative climate change policies, and protect caribou habitat.

Reinforcing marketplace shifts towards sustainability began to create new political opportunities in the forest regimes in Canada, reaching in to the locked-in political domain with new, more potent pressures on regime actors. Marketplace campaigns targeting Canadian firms aimed to revoke their "social license" to operate, which also implicated the BC government as the regulator, in the case of the Great Bear Rainforest, and affected "Brand Canada" in the case of the CBFA. Campaigns generated financial and reputational pressure on purchasing companies to change suppliers. Discursive and markets efforts mutually reinforced each other to create a climate of regime destabilization within industry and governments, due to interacting losses in cultural legitimacy, industry stability and political support.

The international and Canadian network of environmental activists in these cases were therefore advancing regime change through top-down (international) engagement with transnational actors, and at the same time through bottom up (community-level) engagement with both firms and policy actors in relevant provincial jurisdictions. Fundamental to global marketplace strategies was their connection to regime actors and institutions within Canada, and the domestic political leverage they conferred upon ENGO actors. Policy-makers had to respond to public and environmentalists' concerns about the Great Bear Rainforest and later the Boreal forest, but also to communicate to the international marketplace that Canada was governing forests sustainably. Environmentalists arranged visits from disgruntled commodity

purchasers who did not want to be given a 'green-washed' story from government public relations people, and who threatened to cancel contracts if politicians did not signal a radical restructuring of provincial-level forest policy. Emissaries from the international marketplace were powerful proxies, able to influence the industry and government in new ways. They communicated that new policies and significant changes in industry practices were necessary to sustain access to international markets.

Using the threat of markets reprisal to gain power, ENGO actors entered into direct negotiations with the forest industry - in an approach they called an "inside-outside" strategy. This safe solutions space acted as an emergent niche wherein many of the assumptions guiding the forest industry were questioned and adoption of ecosystem-based management was adopted as a central principle. While niche-level negotiations proceeded, ENGO actors mobilized the public through domestic campaigns and engaged with government from their new position of power. It is the linkage between brand-focused storytelling, the financial threats, and the proxy power this provided to environmentalists which began to influence domestic policy and create regime openings that enabled rules to change, resources to flow towards innovative practices, and new a culture of collaboration to emerge between ENGOs and forest companies.

The results of this can be seen more fully in the case of the Great Bear Rainforest, where radically new ecosystem-based governance structures and rules have been implemented, and First Nations co-management was also enshrined. Here, in addition to cultural and marketplace pressures, there were legal and constitutional rights that the British Columbian government had to accommodate (Smith, Sterritt & Armstrongt, 2006; Price et al., 2009). The Canadian Boreal Forest Agreement must still translate much of their vision of more sustainable forest management into provincial-level policy vehicles across the country.

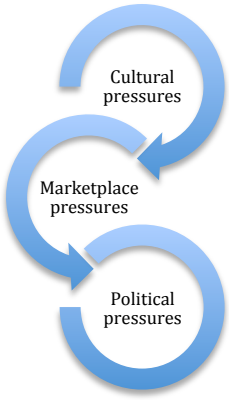

Figure 13. Reinforcing 'multi-domain' pressures on regime actors.

Civil society actors in this case generated mutually reinforcing pressures across cultural, market and policy domains within the dominant forest regime, which rippled throughout the supply chain and into domestic policy spheres (shown in Figure 13). ENGO actors capitalized on emerging political and industry opportunity structures, constructing and translating pressures from global market campaigns and the growing demand for certified wood and paper products into new political opportunities to advance sustainable forest policy. Powerfully framed stories of destruction and opportunity to do good were central to the narrative, and these drew upon and deepened the normative opportunity structure created by growing consumer awareness and concern about environmental problems. This is discussed more fully in the section on landscape leverage.

ENGOs advanced one final regime-focused strategy to create transition pressures. Within the connected domains of politics and markets, ENGO actors advanced novel institutional structures and co-opted existing ones. The Forest Stewardship Council certification system is an innovation in global governance structures, requiring that signatory companies in the Great Bear Rainforest adopt forestry standards, supply chain management and procurement practices that were managed to a higher sustainability measure. The Canadian Boreal Forest Agreement contained provisions for a unique standard, but one that would take as it starting point the best practices of FSC, SFI and CSA certification systems. Certification represents an

innovative market governance structure, however, it fit with existing marketplace functioning and norms, speeding the acceptance of new practices and making its adoption easier for firms, especially if they were being targeted by boycotts. In the policy domain, ENGO actors co-created new 'safe spaces' for direct bi-lateral negotiations with forest companies, as a forum to find systemic solutions and test innovative approaches - in effect developing niches for experimentation with incumbent regime actors. In the case of the Great Bear Rainforest Agreement, environmental actors successfully co-opted existing regime structures by folding their bi-lateral agreements into official government planning processes, which resulted in their solutions being formally legislated. The new approaches developed under the Canadian Boreal Forest Agreement have yet to be institutionalized through formal policy across seven provincial jurisdictions, but that is the goal of signatories. In these ways, the creation of new structures and co-opting existing ones both played a part in driving regime transition.

Landscape leverage and the role of ENGOs in co-structuring landscape trends

As described above, while the landscape level is portrayed as "exogenous" in the MLP, this presents challenges for understanding how the deliberate long-term efforts of outside actors can shift perceptions of regime actors, and also influence regimes through distributed political action over time. Landscape-level cultural values and consumer trends around paper and wood product consumption are evolving, and the above cases of forest regime restructuring illustrate how coordinated networks of environmental movement actors have begun to influence and strategically direct these pressures to destabilize and transform the incumbent regimes in Canada (and other countries). Via certification, ENGOS and global networks of forest-dependent communities have deliberately structured market sectors over the last 20 years to drive increased consumer demand for green products, outside of formal regime structures. Through the markets campaigns described in these cases, ENGO actors have tapped into and shaped consumer preferences and values at the landscape level. ENGO actors have successfully mediated and co-constructed trends at the landscape level: selecting,

strategically amplifying and directing emerging trends in consumer values and market preferences towards particular regime actors (i.e. politicians, bureaucrats, shareholders, Fortune 500 and forest company executives) to encourage more sustainable purchasing and forest policy change. The long-term ecological trend of systematic degradation and loss of the world's original or frontier forests (a landscape trend) was also made more salient to regime actors through framing, communication, and boycott strategies of ENGOs. Therefore, this case suggests that that landscape level is more permeable to influence than suggested by the MLP, and that niche-to-landscape and actor-mediated landscape-to-regime interactions may be as important to understanding sustainability transitions as niche-to-regime interactions.

In order to advance theorizing about the agency involved in orchestrating mutually reinforcing dynamics, I propose the concept of *landscape leverage* to describe the proxy agency that functions through social mediation and interpretation. Actors pursuing landscape leverage strategies could be seeking either to reinforce an incumbent regime or to disrupt it. The concept of landscape leverage is intended to clarify the distributed agency involved in broad political and normative mobilization activities of civil society organizations and actors, and the resultant influence of these activities on transition trajectories. The process of generating landscape leverage involves actors selectively mobilizing and amplifying landscape pressures onto the regime, timed to align with political and industry opportunity structures that are co-evolving in the regime. Landscape leverage requires the exercise of proxy agency, which is socially mediated and focused on influencing others who possess the knowledge, resources or power to act (Bandura, 2001; 2006). In this case the proxy agents were marketplace actors, citizens and consumers who acted on behalf of the environmentalists' forest conservation and market restructuring agenda. Actors work through collective agency when aligning activist networks around common goals and develop collaborative agendas, which combines with the individual agency each actor exercises within their immediate surroundings to enable wider influence.

Conceptualizing these regime-disruptive, discursive activities as niche practices inaccurately conflates the development of socio-technical novelty within niches (and the associated shielding and nurturing they require) with the more distributed political activities aimed directly at regime actors through proxy agency, and the related deliberate influencing of landscape trends over the long-term. The market campaigns of ENGOs mobilize proxy agency to select and mobilize specific landscape pressures in order to contribute to industry and political opportunity structures for transition, as described in the section above. These cases illustrate five strategies whereby actors interface with the landscape and bring influence to bear on the regime, through 1) selecting 2) framing 3) amplifying 4) mobilizing, and 5) translating landscape pressures.

Societal values are considered to be a landscape-level trend in the MLP, and the last decades have seen increased consumer valuation of green products. In less than 20 years, due to the efforts of ENGOs and creation of the Forest Stewardship Council (FSC), the marketplace for wood and paper has grown from no certification of sustainable practices in 1993, to 10% certified by global non-state systems in 2009 (FPAC, 2009). The cases show how ENGO actors selected and framed latent consumer values through the engagement platform created by markets campaigns and FSC - turning them into culturally, financially and politically salient landscape pressures which were deliberately brought to bear upon the forest regimes in Canada to bring about restructuring. In order to do this, ENGOs *selected* the landscape-level cultural values of a sub-section of ethical consumers, large purchasers, and reputation-sensitive brands. ENGOs targeted recognizable brands, cultivated European forest products customers, and worked largely with student groups, selecting a sub-group of the population with higher than average levels of ecological concern or 'green values'. Boycott and blanket campaigns against big brands provided a platform for ongoing media attention and storytelling, driven by grassroots protests and creative campaign tactics, enabling ENGO

actors to empower this highly distributed proxy sub-group with greater voice and influence in the debate about acceptable forest practices.

The 'green values sub-group' was selected and activated through discursive strategies – *framing* or interpreting the problem of global deforestation and endangered species with compelling narratives and images, identifying 'bad actors' in high consumption sectors, and specifying clear actions to take. The actions differed depending on the proxy agent: grassroots activists and consumers in Europe and North America were encouraged to participate in collective protests and actions to express concern, shareholders and financiers questioned the financial implications of campaigns, and leading brands who had adopted new procurement policies spoke out in favor of change. This frame was *amplified* by targeting globally recognizable brands such as Nike, Home Depot, Ikea, Kleenex, and Victoria's Secret, using subversive media strategies, direct action, and other grassroots organizing and communications tactics to gain widespread media attention. Some environmentalists refer to brand targeting as 'brand jujitsu', where the power of one's opponent is used to accomplish one's own ends. The targets were financially and materially linked to the forests being destroyed, which created turmoil, public relations challenges and ethical dilemmas for executives within big brand companies being asked to boycott specific logging companies. Shareholder and investor concerns amplified these dilemmas, consuming the time and energy of senior executives who had to investigate and defend against environmentalists' claims.

Once high-profile companies capitulated to the campaign demands to green their supply chains and cancel contracts with Canadian companies logging in 'endangered forests', environmentalists acted to *mobilize* emissaries from firms and other marketplace representatives who were strongly concerned about sustainable forest management. These tactics were developed in the Great Bear Rainforest and transferred to the Boreal campaign. In the GBR, representatives from German publishing industry were key allies, visiting logging

operations, boardrooms and government offices to express their concerns directly to regime politicians in British Columbia. In the case of the Boreal, the CEO of Limited Brands (who owned Victoria's Secret) played an important role after his company cancelled contracts of Boreal pulp and subsequently advocated to provincial governments and the Forest Products Association of Canada for protection and changes to the forest regime. As corporate targets changed, and the roster of companies with sustainable procurement policies grew, more of the marketplace was mobilized to express sustainable preferences. Furthermore, a network of international and grassroots activists were regularly mobilized to direct focus from one target to the next, sustaining the power of campaigns to shift purchasing choices in key sectors - solid wood, office paper, magazines, book publishing, and disposable paper products.

Canadian forest companies experienced financial and reputation risk and disruption due to eroding corporate 'social license', time-consuming campaigns, and the direct financial costs due to cancelled contracts. In both the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement forest companies agreed to participate in negotiated 'solutions spaces'. The first step in negotiations was to agree to a 'cease-fire' where international markets campaigns focused on participating companies would be suspended, in exchange for large moratoria being placed on endangered habitat areas (these agreements occurred in 1999 in the GBR, and in 2009 in the Boreal - see Timeline in Table 4). This regime opening was *translated* by ENGOs and participating firms into practical, sustainable institutional forms. Translation pressure was ongoing, with both distributed and targeted dimensions. Distributed translation pressure came in the form of third-party forest certification and the improved practices demanded therein and from procurement policies from large buyers specifying new green product requirements. Targeted translation pressure took the form of expectations from key marketplace actors who were waiting to see sustainable forest management outcomes, and from domestic political pressure generated through the public campaigns of ENGOs. In the case of the Great Bear Rainforest, several subsequent governments took credit for

implementing a world-class forest agreement into law in British Columbia. Niche innovations defined and piloted in formal negotiations processes were taken up or adopted by the regime at this time. In the case of the CBFA, the Federal government recently funded the initiative, and provincial governments have made numerous statements in support of the goals of the Agreement, signaling the likelihood of policy implementation. Furthermore, once selected, framed, amplified, mobilized and translated, green consumer preferences continued to operate as a landscape pressure on the regime – implying that the campaign activity of ENGOs, coupled with changing norms and market dynamics, actually co-structured the new landscape trend of continuous demand for greener wood and paper products.

Innovation at the niche level

Civil society actors co-developed niche innovations as part of their multi-level and comprehensive strategy to shift the forest regime. These spaces of novel practice were somewhat different from those socio-technical niches described in the MLP, where new technology, user practices and regulatory structures co-evolve, and which emphasize protecting niches from market forces and incumbent regulatory structures in order to succeed and scale (e.g. Geels and Schot, 2007; 2010). Instead, niches were sites of broader *social innovation*, where new knowledge, values, practices, policies, and platforms for collaboration were developed (Westley and Antadze, 2010) in order to transition the forest regimes towards sustainability. ENGOs cultivated niches that acted in a "top-down" manner to influence global markets, as well as "bottom-up" regional innovation through the solutions-based negotiations with between firm and environmental representatives.

At the global level, innovation niches shifted consumer practice and supply chain management. New niche practices have influenced global supply chain practices of large corporations. Targeted Fortune 500 firms and large brands in wood and paper markets have developed new practices in the form of procurement policies, chain-of-custody research, and

other corporate social responsibility practices. FSC is now a "global niche", certifying over 5% of the marketplace for wood and paper products, with a total 10% of the supply chain now certified (FPAC, 2009). The structure of FSC has acted to channel proxy agency and collective agency of the stakeholders involved, enabling them to extend their reach far beyond their personal agency to impact global trade and supply chain management practices in one of the world's largest resource sectors.

At the regional level, forest company representatives and environmentalists were focused on generating new knowledge and redesigning forest management practices. These bi-lateral solutions spaces share some similarities with policy transition arenas, where policymakers design collaborative policy interventions by convening stakeholders to create new visions and rapid learning opportunities (e.g. Loorbach and Rotmans, 2010). However, the innovations established through niche negotiations were not designed not by policy actors or regulators, but rather by civil society and firm actors through a self-organized "emergent transition arena" (Frantzeskaki et al., 2012). The agency expressed in these niches was individual and collective (see Chapter 4), as shared visions emerged and actors began to collaborate on redesigning the incumbent system. Negotiations processes functioned as niche-level 'solution spaces' not to generate new market-ready technologies, but to develop new rules, norms, relationships and practices deemed more legitimate than the incumbent industrial forest regime. Environmentalists and company representatives cultivated new practices to engage with each other, built trust and shared visions, and applied new knowledge to forest management and conservation. Both parties invested in new science and mapping to collate operational information among companies and build spatial scenarios. Models of sustainable forest management from across Canada served as prototypes, and ENGO actors worked to promote these practices and make them desirable to implement through marketplace threats and promises. Formal negotiations between ENGOs and forest companies therefore shielded

regime actors from incumbent regime norms and enabled a new ecosystem-based management regime to be envisioned, tested and adopted.

In the Great Bear Rainforest Agreement, the innovations developed multi-laterally with companies and First Nations, with new regulations and co-management enshrined in legislation, and the goals of the forest regime transformed from industrial extraction to ecosystem-based management that would ensure human well-being. In the Canadian Boreal Forest Agreement, similar goals were adopted bi-laterally by ENGOs, the Forest Products Association of Canada and member forest companies, who now seek to implement them through formal multi-stakeholder planning and government policy vehicles across Canada. Overall, these cases illustrate the breadth of niche practices (beyond the technological) that can emerge across domains as part of a multi-level transition, and how deliberate actions by civil society can cultivate innovation niches for sustainability purposes beyond the development and scaling of new technologies.

Summary of mutually reinforcing dynamics and forms of agency

Grin's three categories of strategic agency involve advancing niche innovations, opening up opportunities at the regime level, and making regime openings and innovations relate to one another by orchestrating mutually reinforcing dynamics (2010). Table 5 and Figure 14 both show ENGO actors' mutually reinforcing strategies at the niche (novel practices), regime (new institutions) and landscape levels, as well as the mediating level of landscape leverage where proxy agency was mobilized onto the regime to capitalize on and cultivate market and political opportunity structures. Environmentalists co-created transition dynamics by capitalizing on opportunity structures within markets and political institutions (shown in Table 5 at regime and landscape levels). Two columns summarize the cultural/political strategies and the marketplace strategies advanced at each level to create reinforcing pressures

that challenged locked-in forest regimes in the Great Bear Rainforest and Canadian Boreal. Landscape leverage strategies are shown as mediating between landscape and regime level.

	ENGO Political & Discursive Strategies	ENGO Market Strategies
Niche ***(Novel practices)***	ENGOs frame and communicate different models; shift from conflict to bi-lateral negotiation; advance best practices; negotiate in safe space with industry to create new knowledge, principles, and pilots; jointly lobby with companies for policy adoption	Target, then work with, large purchasers to implement procurement policies and supply chain management practices; shame bad actors, target representatives of key sectors; Create openings for alternative markets for fibre; praise early adopters
Regime ***(New Institutions)***	Communicate, translate story of threats/win-win solutions to domestic public & decision-makers; grassroots and public campaigns; participate as stakeholders in provincial and national policy processes; partner with other power-holders, apply marketplace pressure to government to adopt new policies ***Political opportunity structures:*** New legislation to protect species, provincial land use planning processes already underway, cultural conflict over forests	Generate economic power through threat of contract cancellation; use market pressure to amplify political and discursive strategies; direct marketplace pressure onto elected officials through visiting delegations; co-develop new principles and agreements "win-win approaches" between ENGOs and industry; create FSC to define and drive adoption of sustainable forest management ***Industry opportunity structures:*** Forest sector readiness in Canada; FPAC leadership financial losses and cultural conflict over forests
Landscape leverage (Proxy agency)	Market campaigns against forest companies and global brands select green values, frame and amplify to speed adoption via procurement policies and economic threat; Hundreds of millions of dollars of contracts cancelled. Industry representatives visit politicians and demand change; global firms are emissaries of green consumer values	Global ENGOs and local partners communicate story of threats/ solutions to marketplace, use grassroots big brand boycott campaigns, celebrities to frame/shape and translate green consumer values; FSC as mediating structure and platform – global market regulations shape domestic policy processes and influence discourse, market trends
Landscape	***Political Opportunity Structures*** Lack of effective global forest governance structures; growing social and consumer values segments in support of endangered forests, species, climate action; rise of corporate responsibility; existing discourse about Canada as good forest steward combined with threat to brand	***Industry Opportunity Structures*** Greening consumer values; globalized forest products markets; pressure from demographic changes and loss of competitiveness; rise of interest in low-carbon forest products; FSC most widespread eco-certifier of paper, need for corporate social license.

Table 5. Mutually Reinforcing Dynamics Orchestrated by ENGO Actors

In the GBRA and CBFA cases, environmentalists' strategies aimed first at the regime and landscape levels in order to "constructively interfere" with the regime by targeting interacting cultural, markets and political domains. ENGOs pursued global strategies through markets campaigns and the creation of FSC because the domestic forestry regime was highly locked-in. Campaigns sought to revoke the cultural legitimacy of the incumbent regime, and generated economic influence through contract cancellations and financial threats. As a result, both industry and government actors experienced disruption as the cultural and financial strategies spilled over into the policy and regulatory domain. Figure 13 (based on Figure 4, in Chapter 2)

shows these multi-level interactions over time, with the arrows illustrating agency expressed through landscape leverage strategies, which are connected to regime actors through reinforcing cultural, market and policy pressures. This results in regime disruption, whereupon forest industry and environmental actors establish the niche (shown by arrows entering the solutions space). Innovations developed here are later reincorporated into the regime, influenced by ongoing landscape leverage and mutual reinforcement dynamics. When these are taken up into the regime, the lines become solid again.

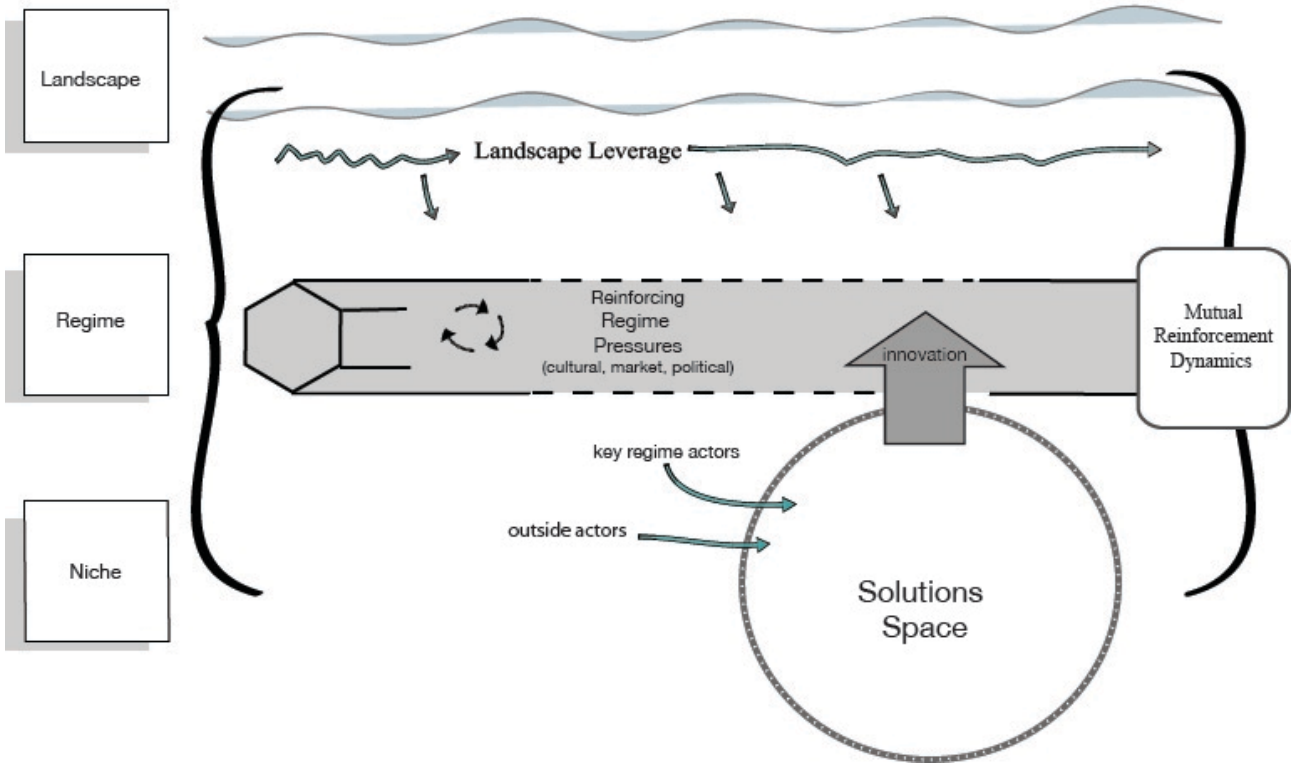

Figure 14. Multi-level Perspective on Environmentalists' Mutual Reinforcement Strategies in Canadian Forest Regime Transition

In summary, ENGOs' markets campaigns mobilized the proxy agency of distributed networks of actors with diverse power and resources - from consumers to shareholders to CEOs of fortune 500 companies. Through strategies of selecting, framing, amplifying, mobilizing and translating, environmental campaigns orchestrated landscape leverage to connect with the interacting regime domains described in the section above - opening up industry and policy opportunity structures. Campaigns revoked cultural legitimacy, drove global markets towards sustainability, created negative financial consequences for forest companies, and mobilized the proxy agency of more powerful spokespeople to advocate to incumbent regime actors for policy change. While conflictual, these strategies conferred new legitimacy onto outside ENGO actors whose efforts to break regime lock-in were successful.

Because of this newfound legitimacy, environmentalists entered into negotiations with forest companies as equal partners in order to redesign the forest management to achieve sustainability goals. This approach to creating reinforcing dynamics was known by environmentalists as an "inside-outside" strategy - involving external campaigning and leverage generation coupled with negotiation and development of alternatives directly with regime actors. The novel practices developed in niche solutions spaces were largely non-technical in nature. Over a twenty-year period, these forest campaigns fostered innovative practices spanning from Canadian forest regimes into all aspects of the forest products supply chain - affecting corporate procurement, chain of custody tracking from forests to consumers, and generating three competing global forest certification schemes. At the regime level, the combination of creating new structures and co-opting existing ones in markets and policy arenas enabled innovative ecosystem-based forest management practices to be institutionalized in the Great Bear Rainforest Agreement, providing a potential pathway for the signatories of the Canadian Boreal Forest Agreement to follow.

The Unique Role of Regime Outsiders

Regime lock-in and path dependency ensure that the selection environment favors ongoing maintenance of the regime, but in these cases roving actors in the form of a well-organized global coalition of ENGOs were able to identify reasons for lock-in, and use creative means to disrupt and then reconstruct aspects of the regime. This globally disruptive agency is distinct from that expressed within niches to generate socio-technical innovations, as it is specifically aimed at destabilizing the regime through direct political, discursive, and marketplace confrontation, and involves selecting landscape level trends in order to reconfigure regime rules and interpretations. It may be similar to the "stretch and transform" niche strategy (Smith & Raven, 2012) where regime outsiders deliberately cultivate environments conducive for niche adoption.

As regime outsiders, civil society actors have certain advantages in challenging incumbent forms. Clearly, opportunities to enact disruptive agency (in its individual, collective and proxy expressions) are not available in equal measure to all regime (or niche) actors, due to various institutional constraints on their behavior. Regime actors may take regime functioning for granted, leaving them unprepared to defend it skillfully from the de-legitimizing efforts of social movement actors. Highly embedded regime actors in any sector also operate in environments structured by rules, norms, and accepted practices. For example, policy-makers are limited by their jurisdiction, and by external political and policy-making constraints such as the need to play particular roles in partnerships and informal learning networks which are largely dictated by political expediency or party priorities and ideology. Firm actors are limited to acting in ways that demonstrably increase shareholder and company value. Furthermore, unlike regime incumbents, civil society actors do not have to expend energy maintaining the existing regime, and are free to single-mindedly pursue the goal of regime transition to sustainability – using whatever cultural, political and economic means are available to influence the regime.

Because they confer and revoke legitimacy through their public communications, ENGO actors harnessed public opinion to enable wide support for eventual government policy solutions in the case of the Great Bear Rainforest, and in both cases enabled forest companies to gain market access and secure social license when they agreed to the terms of the 'cease-fire'. Civil society actors can also act directly to disrupt regime stability through civil disobedience. They can also apply political or financial strategies to transform the limitations of other regime actors into opportunities for sustainability transitions. For example, ENGO campaigns delivered political support for change to policymakers, and increased the cost of unsustainable forest practices through boycott campaigns, encouraging firms to adopt sustainable practices in order to maximize shareholder value. In this way, ENGO actors not only leveraged consumer concerns into economic threats, they increased the salience and power of other regime incumbents, specifically financiers, customers and shareholders, who didn't want to be associated with targeted firms, and instead become advocates for sustainable practices (Gritten, 2009). Overall, the unique role that civil society actors have to play in advancing multi-level strategies to disrupt and restructure regimes toward sustainability transitions clearly requires further attention and research, especially regarding how global networks of actors can use proxy and collective forms of agency to enlist other powerful actors in regime change.

Conclusion

Given the urgent need to transition towards sustainability, greater alignment of actor and sector strategies is clearly needed. Bandura observes, "As globalization reaches ever deeper into people's lives, a strong sense of collective efficacy to make transnational systems work for them becomes critical to furthering their common interests" (2001, p. 27). This chapter focused on the role of agency, specifically collective and proxy forms, in generating mutual reinforcement of dynamics occurring between niche practices, incumbent regimes, and the landscape. The research questions were: *How did the strategies of transnational environmental*

actors encourage sustainability transitions in the cases of the GBR and CBFA? And, what does analysis of environmental actor strategies contribute to the understanding of agency and multi-level interactions in sustainability transitions theorizing?

The cases of forest conservation in the Great Bear Rainforest and the Canadian Boreal Forest Agreements illustrate how reinforcing local and global strategies changed financial incentive structures for forest companies, and how through mobilizing collective and proxy agency, new venues opened up to engage in multi-sector innovation domestically. These distributed strategies had a path-breaking effect on locked-in forest regimes in Canada. At the same time, environmentalists' strategies have helped to structure new global institutions that harness significant market share globally, and provide a platform that legitimizes environmentally and socially sustainable forest practices in any region where people are struggling to break locked-in regimes. In this this chapter, I find that:

1) Environmentalists deliberately generated **reinforcing pressures within the regime** that interacted between cultural, markets and policy domains to disrupt locked-in forest regimes;
2) Pressures on regime actors were generated through **distributed "landscape leverage" strategies** involving proxy agency, to select, frame, amplify, mobilize and translate landscape pressures into a loss of cultural legitimacy and financial threats to the regime and to co-structure new long-term marketplace trends in the form of consumer demand for green products;
3) **Niche development was spatially distributed** and largely non-technical, involving the creation of new markets and non-state governance vehicles (FSC) for certified forest products at the global level, and the creation of domestic policy-focused negotiations where firm actors proactively engaged with environmentalists to create and test innovations in sustainable forest management, and;

4) **Environmentalists orchestrated mutually reinforcing dynamics across landscape, regime and niche levels** over time by mobilizing collective and proxy agency to generate regime openings and landscape leverage, and by co-creating niche innovations. These strategies influenced the institutionalization of sustainability innovations in the Great Bear Rainforest Agreement and to a lesser extent through the Canadian Boreal Forest Agreement.

This research contributes new insights about the unique strategies transnational civil society actors undertook to catalyze regime transition towards sustainability, in particular the important role of socially mediated or proxy agency in generating landscape leverage. Strategic agency was expressed by a global coalition ENGOs to advance 'constructive interference' and orchestrate mutual reinforcement dynamics across each level of the MLP. Their key innovations involved the mobilization of the collective and proxy agency of diverse, spatially distributed actors through campaigns focused on well-known brands, storytelling to revoke regime legitimacy, and by directing marketplace threats onto incumbent actors. The political and discursive activities pursued by environmentalists challenged incumbent regime actors by harnessing the proxy agency of diverse actors to amplify particular landscape trends, which de-stabilized the incumbent forest regime and redirected it towards a more sustainable management paradigm, and finally provided ongoing leverage to ensure the new arrangements were institutionalized.

There are several conceptual gaps in the MLP and the governance approach to transitions illuminated through this research. My findings suggest that for sustainability transitions theorizing, the focus of innovation must extend beyond technological niche protection and scaling to focus on broader sustainability innovations, and beyond the role of governance and policy actors in bringing about sustainability transitions, to take seriously the roles of non-state actors, in particular networks of global civil society networks and transnational firms. Critical

local-global dynamics can also be rendered invisible when sustainability transitions are analyzed through the MLP, because its levels do not refer to jurisdictions, or other "real world" spatial distinctions, but instead refer to increasing levels of structuration between sociotechnical systems and human agency. When focusing on policy actors or national systems of innovation, these limitations may be less visible, however as sustainability transitions theorizing extends to look at more distributed challenges, clearer concepts will be necessary to illuminate the important spatial interactions involved in shifting regimes towards sustainability.

Related to the need for global-local spatial distinctions, due the spatially distributed sphere of influence of non-state actors, new forms of multi-level influence need to be depicted within the MLP. My findings underscore the need to elaborate the concept of landscape in order to accommodate its constructed nature over time, and to capture the dynamics of agency involved in mobilizing or directing landscape-level pressures onto regimes in support of sustainability transitions. The landscape concept must also be made endogenous within the MLP to account for the long-term strategic agency of actors. In the case of sustainability transitions, many important 'trends' in the landscape represent cumulative negative social and ecological consequences that have been (intentionally and unintentionally) externalized by regime actors and firms in the course of maximizing financial return for investors. Likewise, as illustrated here in the case of increasing green purchasing trends, global networks may co-structure new trends through concerted, interlinked and long-term efforts. To recognize the constructed nature of landscape trends is critically important for theorizing sustainability transitions, where it is the broader landscape trends – ecological, demographic, political and ideological – as well as the regimes themselves, which must be transformed to achieve the normative and ecological goals of sustainability.

Because the MLP is based on a constructivist and evolutionary ontology, it can and should accommodate a redefinition of the broad context or selection environment (landscape) as continually subject to re-structuration and re-interpretation by niche and regime actors over time. Geels' (2011) recent suggestion that the MLP be recast as a flat ontology, not a nested hierarchy, may open up conceptual avenues to consider how niche and regime actors operate to co-construct and mediate landscape trends. In this sense, niches could be conceptualized as 'surrounding' regimes – interpreting, co-constructing and producing innovation into the regime, in response to landscape trends. Another theoretical avenue to pursue to help endogenize the landscape may be to import Bandura's distinction between three types of environmental structures (1997, 2001). The three types are the *imposed environment*, the *selected environment*, and the *constructed environment*, which represents a gradation of changeability, and requires agency of different focus and scope. Whereas some of the physical trends aggregating at the landscape level may be exogenous (the imposed environment), the selected environment may be subject to very long-term agency, and the constructed environment may be subject to continual reframing and social construction, depending on the perspective of the beholder, and the interpretive efforts of mobilized actors.

Further Research

The strategies of transnational environmental actors described in these cases shows their role goes beyond that of grassroots or community advocates, or even that of intermediaries working to advance a global niche. More research is needed to investigate the global influence of networks of civil society actors and organizations in advancing sustainability transitions. The MLP, combined with Grin's (2010) perspective on the strategic agency involved in orchestrating mutual reinforcement dynamics and Bandura's (2006) three modes of agency, helped to illuminate the multi-level strategies ENGO actors employed to drive innovation in forest policy in Canada and structure sustainable practices into global supply chains. Further research could investigate the various ways distributed or proxy agency can be mobilized to

encourage sector-wide or supply chain sustainability transitions, focusing on other social movements and transnational firm actors, actors within additional sectors that are the focus of sustainability transitions research such as energy, food, transportation, water and agriculture. For example, given that many of the actors and organizations who created these strategies for forest conservation are now working on global climate and energy transitions, additional research could complement work on grassroots community energy transition to better understand how niche transitions relate to the global strategies of environmental and social movements in response to climate change. Additional research could also identify instances where other regime actors have complemented or amplified the strategies of civil society actors. More cases are needed to understand whether such strategic agency is unique to particular groups of actors and at what scale. The ways deliberate orchestration may also be operating in order to *maintain* regime stability and undermine sustainability efforts should also be considered.

Proxy agency and efforts to harness it remain largely unexamined in the literature on sustainability transitions, sociotechnical change and social innovation. The interconnected market and environmental campaigns described here differ from social media, social marketing, or behavior change campaigns, which rely on collective aggregation of individual agency to create social change. These cases did not rely on the collective *actually shifting*, but instead created optics and strategic leverage by connecting actors located at different leverage points in a complex problem domain to shift regime actors and structures towards more sustainable behaviour, through the use of narrative, big brands, marketplace pressure and political advocacy. More research is needed on various ways proxy agency has been activated and could be activated to drive sustainability transitions.

This research illustrates a need for further development of the concept of multi-domain dynamics and the agency involved in generating interacting pressures among cultural, market

and policy and domains within regimes to reduce lock-in. In this regard, both resilience approaches (e.g. Olsson et al., 2006; Westley et al. 2011) and social innovation literature (Westley and Antadze, 2010; Moore and Westley, 2009) could provide some useful concepts about cross-scale and multi-domain interactions, and the agency involved in navigating transitions. To build greater understanding of sustainability transitions pathways, there could be further theoretical synergies with social innovation literature because of its focus on non-technical innovation, building on the insights of recent work on both grassroots innovation (Seyfang and Haxeltine, 2013; Raven and Smith & Dobell, 2010) and the connection between sustainability transitions and social innovation (Haxeltine et al. 2013). The notion of opportunity structures may also be fruitful, and further research could analyze how these co-emerge at the regime level through deliberate actor strategies, in markets, industries, policy arenas and culture. Because this case didn't deal directly with technological innovation, additional research could focus on new technologies such as renewable energy or electric vehicles, in order discover similarities and differences in the way mutual reinforcement dynamics and the exercise of proxy and collective agency might create regime openings. Finally, I welcome challenges or further elaborations on the concept of 'landscape leverage' as a description of how globally networked outside actors can mobilize proxy agency to mediate between the landscape level and the regime to catalyze transformations toward sustainability.

Chapter 6. Evaluating Systemic Social Innovation: Comparing Institutional Impacts from the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement

Introduction

One of the great innovation challenges of the 21st century is to transition major resource industries and economic sectors towards sustainability. If this work is undertaken at the scale required to avert social and ecological disasters, redirecting entrenched systems will cause significant disruption and transformation in established institutions. Such large-scale transitions will be inherently unpredictable, involving institutional change processes that are emergent and cross-scale, which engage multiple actors with conflicting values (Elzen et al., 2011; Grin et al., 2010; Raymond et al., 2014). Social innovation is a rapidly evolving field, whose proponents are advancing the theory, innovation processes and cross-sectoral practices that are required to address complex societal challenges (Mulgan et al., 2007; Mulgan and Leadbeater, 2013; Westley and Antadze, 2010; Westley, Zimmerman and Patton, 2006). Actors within governments, corporations, communities, and civil society are increasingly working to address social and ecological challenges at their roots, using deliberate, innovative and comprehensive approaches. It is critical for practitioners and scholars alike to be able to evaluate both the process and outcomes of systemic change efforts that aim to solve complex social and environmental challenges. This chapter takes a social innovation and institutional approach to compare system-wide impacts of two innovative agreements that advance sustainability in the Canadian forest industry - the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement. The chapter has dual purposes of discovering more about the process and outcomes of social innovations through a case comparison, and contributing an institutional framework to evaluate systemic impacts of social innovations.

The forest industry in Canada has been the subject of significant social conflicts both

regionally and on the global stage, due to ecological concerns such as overharvesting, and loss of endangered forests and habitat, and to due conflicting social and community concerns about the costs and benefits of large-scale extractive industry. The deliberate strategies of environmentalists and the counter-strategies advanced by forest companies have led to collaborative problem-solving efforts among environmental non-governmental organizations (ENGOs), major forest companies, communities, Aboriginal or First Nations groups, and governments in the form of innovative multi-sector agreements. These Agreements were linked to and catalyzed by global environmental campaigns that targeted large corporations and aimed to shift supply chains towards for wood and paper toward more sustainable products. The Great Bear Rainforest Agreement (GBFA) and the Canadian Boreal Forest Agreement (CBFA) have advanced significant changes in forest management on over 80 million hectares of Canadian forestland in the twenty-year period from 1993 to 2013. While these two Agreements have primarily led to innovation in forest management practices and governance arrangements in Canada, they also involved cross-scale processes of social and marketplace innovation. Analyzing and comparing their impacts therefore provides an opportunity to learn more about multi-sector efforts to solve complex problems that span local and global systems. The findings can inform other multi-sector attempts to solve social and ecological challenges, and provide insight into how to evaluate systemic change initiatives.

The following section introduces key concepts from social innovation and institutional change theory that together make up the conceptual approach. Next, I describe the research question and methods. The subsequent section describes the GBRA and CBFA cases in detail, and the systemic impacts from each Agreement are compared using insights from institutional change theory (Hargrave and Van de Venn, 2006; Zeitsma and Lawrence, 2010) and social innovation (Westley and Antadze, 2010). Institutional impacts are evaluated based on observed changes to formal rules; informal governance structures; knowledge, practices and routines; cultural norms and discourse; and redistribution of power and resources. In addition, several factors

during the process of institutional change were identified as influencing the institutional impact of each Agreement, which had to do with variations in the founding conditions of the innovations, the actors and strategies involved, and the emergent opportunities in the wider social context. These factors were: 1) the degree of conflict and media visibility; 2) the relative power of the actors in conflict; 3) the values and breadth of the new frame; 4) the scope and complexity of the initiative; 5) the readiness of political vehicles for implementation; 6) the resources mobilized for implementation; and 7) the long-term involvement of senior actors. The conclusion points to future research directions in systemic social innovation and suggests implications for practitioners.

Conceptual Approach

Social Innovation

Social Innovation is an emerging multi-disciplinary field that is developing knowledge and practices to address deep-rooted social-ecological challenges. Social innovation emphasizes the creation and spread of novel social solutions through collaborative, entrepreneurial and cross-sectoral means. Four elements of social innovation have been distinguished, including the process of generating a novel product or solution; the solution or invention itself; its diffusion or broad adoption; and finally, the value or impact created (Phills et al. 2008, p. 38). Social innovations are introduced into society through a complex interplay between social structures, opportunities, and the deliberate agency of actors (Westley and Antadze, 2010). Several definitions of social innovation highlight the importance of increased social participation, and increased capacity to act (HUBERT, 2010; Caulier-Grice et al., 2012; Haxeltine et al., 2013). Overall, approaches to social innovation coalesce around the importance of both the *process* and the *outcomes* of initiatives, recognizing that new social value and new social relationships are created (HUBERT, 2010; Nicholls and Murdock, 2012; Haxeltine et al., 2013).

One strand of social innovation is particularly concerned with the complexity of social processes and the need for systems-level change. Haxeltine et al. (2013) see social innovation as "a meeting place for different discourses on large-scale societal or systemic change in response to the complex, seemingly intractable social and ecological problems faced in the 21st century". Westley and Antadze (2010) draw on resilience and complex systems approaches (Gunderson & Holling, 2002) to define social innovation as "a complex process of introducing new products, processes or programs that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs" (2010, p. 2). From this perspective, for a social innovation to have broad and durable impact, it will affect the fundamental distribution of power and resources, increase social resilience through the re-engagement of vulnerable populations, and challenge dominant institutional rules (Westley & Antadze, 2010). This more radical or systemic approach to social innovation emphasizes disruptive institutional outcomes, and has also been called *transformative social innovation* (Haxeltine et. al, 2013), *systemic innovation* (Mulgan & Leadbeater, 2012) and *catalytic innovation* (Christensen et al., 2006). Disruption of larger institutional contexts also "demands innovation across multiple scales" and can be advanced by actors capable of connecting the innovation to political, cultural or economic opportunities as they emerge and ripen (Westley et al., 2011, p. 767).

Research metrics for evaluating the impacts of social innovation are scarce (Antadze & Westley, 2010). Mulgan et al. call for "more rigour, sharper concepts, and clearer metrics in evaluating social innovation" (2007, p.44). However, because social innovations require a diversity of resource inputs and outputs and are not comparable across cases it can be difficult to determine both *what* to measure and *how* to measure it (Nicholls, 2009). Evaluating social innovations from a systemic perspective presents

additional challenges because it is difficult to ascribe causality in complex social systems (Westley and Antadze, 2010; Mulgan and Leadbeater, 2013). Therefore, new interdisciplinary approaches are needed in order to analyze and understand the impacts of social innovations (OECD, 2010) - in particular those which look beyond logic models to take a post-positivist view and seeks to understand both the complexity of social processes *and* emergent outcomes (Haskill and Beer, 2012; Patton, 2011). This chapter contributes a new approach for evaluating social innovation using an institutional change perspective. The next section introduces the concept of institutions and summarizes key elements from theories of institutional change (Hargrave & Van de Ven, 2006; Zeitsma & Lawrence, 2010) that can be useful for understanding the process and outcomes of social innovation.

Institutional Change and Innovation

Institutions play a powerful role in the production of new ideas and new forms of social organization, influencing both the creation and spread of innovation (Hollingsworth, 2000; Poole & Van de Ven, 2004). *Institutions* refer to culturally embedded understandings that explain and justify social arrangements and behaviors (Garud et al., 2007) and the rules, norms, and beliefs that constrain and enable action (Hoffman, 1999). Institutions are supported by three pillars: the *regulative*, which guides action through rules, coercion and threat of formal sanction; the *normative*, which guides action through cultural norms of acceptability, morality and ethics; and the *cognitive*, which guides action through the very categories and frames by which actors know and interpret their world (Scott, 1995). Institutional change therefore results in regulative, normative and cognitive changes - impacting formal and informal rules, cultural norms, and cognitive categories or knowledge. Change in institutions is constrained by their enmeshment in reinforcing systems of practices or routines, the interests of powerful actors, and dominant ideas (Greenwood & Hinings, 1996). This institutional 'lock-in' means

that old institutions must be disrupted before new ones can be re-institutionalized (Den Hond and De Baaker, 2007; Tolbert and Zucker, 1999).

Institutional scholars point to the need to understand the work of outside actors in disrupting institutions and creating new ones (Lawrence & Suddaby, 2006), particularly in the urgent arena of sustainability innovations or transitions (Meadowcroft, 2012; Maguire & Hardy, 2009). As Garud, Hardy and Maguire (2007) observe, institutionally embedded actors that have power to force institutional change may not have the motivation to do so, whereas those on the fringes have incentive for change but less power or resources to change institutions. Institutional change efforts, when not driven by exogenous shocks, are understood to emerge from the periphery of fields and be led by less embedded actors and organizations (Greenwood and Suddaby, 2006). Because of their outsider status, the agency of environmental movement actors is less constrained by or embedded within the institutions they seek to change, and are also more aware of and open to alternatives (Seo and Creed, 2002).

Interactions between agency and institutions are shot through with power relations, wherein institutions impact the beliefs and behaviours of actors, and actors likewise employ political and influence strategies to maintain or transform institutions. Different forms of power are involved in the political processes that accompany both the disruption and the creation of new institutions (Lawrence, 2008, p.182). Lawrence (2008) illuminates different forms of power involved in the maintenance of institutional control (systemic power), the institutional agency involved when change is occurring (episodic power), and the forms of resistance to both institutional control and institutional change that can be expressed by actors. Of particular relevance here is institutional agency and the resistance strategies of institutional actors. Institutional agency involves work of actors to create, transform, maintain and disrupt institutions, whereas institutional resistance describes the work of actors to compromise, avoid or defy systemic institutional control or episodic institutional agency (Lawrence, 2008). Actors also engage in framing and discursive struggles to contest existing norms and knowledge and

advance new cultural frames and rules (Hardy and Maguire, 2009; Lawrence, 2008).

Another important concept from institutional theory is *organizational fields*, which refer to shared, reinforcing institutional contexts, and the actors that participate in them, including regulatory agencies, suppliers, resource and product consumers, and organizations producing similar services or products (DiMaggio & Powell, 1983, p.148). *Field frames* bound and organize fields, providing coherent and reinforcing norms, knowledge and rules. Zeitsma and Lawrence (2010) explore how institutional 'outsiders' gain the legitimacy and knowledge to influence an organizational field. The focal system for the purposes of this research is the organizational fields that encompass the dominant forest management regimes in the Great Bear Rainforest and the Canadian Boreal Forest, as well as the wider industry, consumer, and social contexts that make up forest product supply chains. Specific attention is paid to the role of environmental actors as institutional outsiders, whose cross-scale strategies disrupted institutions guiding forest management. The cases below describe environmental activists' efforts to challenge to the dominant forest regime's field frame and change institutions with strategies including: political work at local levels; campaigns directly targeting consumers, international markets and corporate behavior; and collaboration with inside actors from the forest regime.

Institutional change is defined as a difference in form, quality, or state over time in an institution, which can be determined by comparing the arrangement at two or more points in time on a set of dimensions (Hargrave and Van de Ven, 2006, p. 866). If there is a noticeable difference, the institution has changed. If there is significant novelty or discontinuity from the past, the change is considered to be an *institutional innovation.* Therefore, because institutions represent the macro-structures of a social system, institutional innovation implies discontinuous changes within a social system. Based on this approach, I will look for evidence of institutional innovation in the form of significant novelty or discontinuity from previous

institutional arrangements. I draw on definitions of institutions and social innovation above to identify relevant categories for evaluating institutional change. Westley and Antadze (2010) emphasize the changes in routines, resource and authority flows and beliefs in a social system. As described in the section above, key elements of *systemic social innovation* emphasize the introduction of novel social processes, platforms, products or initiatives that result in profound changes to social systems, including 1) new institutional rules or laws; 2) redistributions of power and resources; 3) changes to belief systems; and 4) greater social inclusion through engagement of vulnerable populations. These changes occur across multiple scales of social systems, and both the process and the emergent outcomes of social innovation are of interest. An institutional view (Scott, 1991) emphasizes regulative dimensions (formal and informal rules), normative dimensions (legitimacy, morality and ethics), and cognitive dimensions (knowledge categories and frames). Based on these definitions, systemic social innovation will be evaluated based on novelty or discontinuity in the following categories:

1) Formal governance: regulations and laws;
2) Informal governance and stakeholder rules;
3) Knowledge, practices and routines;
4) Cultural norms and discourse; and
5) Distribution of power and resources.

As noted above, the focal system of analysis is the "organizational field" or forestry regime in the two case studies of the Great Bear Rainforest and Canadian Boreal Forest.

Finally, because in complex social systems, the process and outcomes of social innovation are interrelated, the case comparison will address important aspects during the process of institutional innovation that affected the outcomes. The institutional change process will be considered as occurring over a 4-phase lifecycle, from *institutional stability*, to *institutional conflict*, to *institutional innovation*, and finally to *institutional restabilization* (Zeitsma and Lawrence, 2010, p. 209). This model is consistent with the adaptive cycle model of social

innovation that depicts four similar innovation phases, from conservation/stability, through release, to reorganization, to exploitation, and back to a stable conservation phase (Westley et al. 2006; Westley and Antadze, 2010). Zeitsma and Lawrence's (2010) four-phase model of institutional change will be used to identify phase-sensitive strategies and important emergent processes during the process of social innovation in the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement that affected their outcomes.

Research Question and Methods

The Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement reflect a new approach to the resolution of environmental conflicts, and are part of a 20-year effort of a broad network of environmental actors and organizations to protect endangered forests globally and make the supply chain for wood and paper products more sustainable. These new approaches to conserving forests provide examples of a complex social-ecological problem where multiple stakeholders were in conflict, and where novel approaches were used to shift locked-in forest regimes towards sustainability. By taking the view that social innovation generates change in broader social systems, my research approach aims to contribute both better understanding of the process of social innovation, and to develop a framework for evaluating social innovations as a process of institutional change. My research questions are: *How can the systemic impacts of social innovation be identified and evaluated?* And, *What insights are generated about the process and outcomes of social innovation by comparing the Great Bear Rainforest and Canadian Boreal Forest Agreements through the lens of institutional change?*

Research approaches from institutional theory and social innovation emphasize how institutions are reproduced and changed by interactions between actors and social structures. The research design therefore included collection of primary empirical data from actors involved in the focal systems (forest regimes in the Great Bear Rainforest and Boreal), as well as secondary research in order to gain insight into the policy, economic, social and cultural context of the cases and triangulate the data. The phenomena of interest in this case is

contemporary and focused on understanding the context, therefore case study was used as a research strategy (Yin, 2009). Detailed cases were developed to describe the unfolding events leading to and contexts surrounding the Great Bear Rainforest and Canadian Boreal Forest Agreements.

Cajaiba-Santana (2014) suggests that social innovation researchers should look for temporal and spatial variations in meaning, allowing for the analysis of change as people understand it. This analysis is based on primary and secondary data collected by the author between 2010 and 2013. It also draws on data from earlier case study research on the Great Bear Rainforest conducted by the author and colleagues 2008 - 2010 (Riddell, 2009; Tjornbo et al., 2010). The CBFA case is based a series of 20 interviews conducted by the author between 2011-2012 with the CBFA signatories and others central to the negotiations process. Interviews were open-structured qualitative interviews, based on methods described by Kvale and Brinkmann (2009). A review of historical documentation, media reports, organizational websites and public relations materials, scholarship related to the case, published campaign materials, and internal documents provided by Rainforest Solutions Project, CBFA Secretariat, and other signatories was also conducted. These secondary documents were used to verify the details of the Agreements. A longer narrative monograph on the CBFA case study with additional primary quotations is forthcoming (Riddell, *forthcoming*).

Data were initially analyzed using line-by-line coding in order to stay close to the data while allowing patterns to emerge. A modified grounded theory approach was used to develop and organize general codes that were checked against text and linked with each other to refine understandings and find connections (Charmaz, 2006). Data were organized into temporal sequence and detailed narrative was developed for each case, based on primary and secondary sources, in order to verify the events and descriptions where possible. Interviewees from forest companies, environmental non-governmental organizations (ENGOs) and the

Forest Products Association of Canada (FPAC) also reviewed the two full narrative cases to verify that they were factual and authentic to the voices of those interviewed, and feedback was incorporated into the cases. Potential sources of bias in the data analysis include lack of interviews with several GBRA and CBFA signatories, and lack of interviews with observers outside the GBRA or CBFA, including First Nations with territory in the boreal region. Another potential source of bias is that I held past positions with ForestEthics and Sierra Club of BC during the Great Bear Rainforest agreement process, and was a founding steering committee member of Canopy, a CBFA ENGO signatory. I addressed this bias by triangulating data collection, and conducting line-by-line coding to stay close to the interview data, as well as sharing the detailed narrative accounts of the cases with multiple research participants and incorporating their feedback.

Interview participants involved in the Great Bear Rainforest Agreement case were drawn from the following groups and organizations: Coastal First Nations, Forest Ethics Canada, Greenpeace Canada, BC Ministry of Forestry, Mines, and Lands, Packard Foundation, Sierra Club of BC, and Weyerhaeuser. Representatives from West Fraser Ltd., Canfor, Canopy, Greenpeace, and ForestEthics, were involved in both Agreements, as was the process facilitator from both the CBFA and GBRA. Interview participants for the Canadian Boreal Forest Agreement case include environmental representatives from Ivey Foundation, Pew Environmental Trust, the Canadian Boreal Initiative, Canadian Parks and Wilderness Society, Greenpeace, Canopy, and ForestEthics. Senior representatives from the following forest company were also interviewed: Canfor, West Fraser Ltd., Tembec, Resolute Forest Products (formerly AbbitibiBowater, and Tolko. In addition, three senior staff from the Forest Products Association of Canada were interviewed, one additional process facilitator, and two representatives of the Canadian Boreal Forest Agreement Secretariat.

Case Background

Changing conditions in the Canadian forest sector

Canada leads the world in exports of lumber, pulp and newsprint, which comprises almost 12 percent of the manufacturing GDP (Forest Products Association of Canada, 2011). The forest sector has historically been a crucial part of Canada's resource economy, through export earnings and employment. Canada's export dependency has made the industry vulnerable to economic upheavals in the past. Global pressures on Canadian forest product markets include increase in fast-growing southern-hemisphere plantations, competition with other materials and changing labor and regulatory pressures (FAO, 2011). These pressures caused significant change in the structure of the Canadian forest sector between 1995-2010 - a period considered by many to be the worst crisis in the industry's history, with mill closures, poor financial returns, and direct forest job losses from 367,400 in 2000, to roughly 200,000 by 2010 (Canadian Forest Service, 2011).

Canada's forestlands are 93% publicly owned, and are administered by provincial authority via long-term tenures. Forest companies follow laws guiding tenure, permitting, operations, and silviculture that differ from province to province. Public ownership of forests means that certainty of access is a primary concern for industry. The legal status of aboriginal First Nations, Metis and Inuit peoples also differs across Canada depending on whether historical treaties were signed and on the individual claims of rights and title to different (sometimes overlapping) land areas. This situation has been made more uncertain by a series of court decisions that began to define Aboriginal Rights and Title, beginning with the Delgamuuk'w decision in 1997, which affirmed that Aboriginal Rights and Title had not been extinguished and many First Nations had valid and outstanding legal claims to land and resources in Canada (Persky, 2000).

Forest company, provincial government and union interests historically have interlocked into powerful institutional regimes where incumbent benefits take the form of government income from taxation and 'stumpage fees', industry export income and high-paying union employment in remote, vote-rich regions. The 20th century's dominant forestry paradigm has been sustained yield, which treated the forest as a disconnected group of timber stands, and crop to be harvested on fast, increasingly mechanized rotations (Pederson, 2003). Forests were not managed for wider ecological or social values, and the aim of sustained yield was to liquidate all the old, original forest so management of even-aged stands could be made predictable and efficient (Pederson, 2003). Parks creation often occurred in isolated areas less valuable to industry, or in places with aesthetic beauty but containing little biodiversity or ecologically value. By the early 1990s, environmentalists were advocating comprehensive parks creation to at least meet the 12% goal advocated by the Brundtland Commission (WCED, 1986), as well as a shift in forest practices away from clearcutting and sustained yield, in order to protect biodiversity and ecological values. Community-based and environmental protests occurred across Canada in a so-called "War in the Woods" that pitted environmentalists against the incumbent forestry regime in a "jobs vs. the environment" narrative (Stanbury, 2000). Conflicts over sustainable use of forests were not only occurring in Canada, but globally.

Global Forest Campaigns and the Emergence of Certification

Public concerns over global forest destruction, clearcutting, loss of biodiversity and pulp mill effluent had been growing since the 1970s and 1980s (Gereffi et al., 2001) and by the early 1990s it was becoming evident that many nation-states were unable to protect forests, in part due to globalized forest product markets and a lack of international regulation of forestry activities. In response, a network of environmental organizations began to focus on two international arenas: forest governance and markets for forest products. First they collaboratively initiated a global certification system for sustainable forest products - the Forest Stewardship Council (Bernstein and Cashore 2007; 2010). Second, they developed

campaigns aimed at shifting company forest practices and global supply chains through boycotts, media and marketplace communications, and shareholder activism (Affolderbach, 2011; O'Rourke, 2005).

The Forest Stewardship Council (FSC) was created in 1993, by World Wildlife Fund and Greenpeace, along with diverse global forest actors, and was the first third-party certification system in international markets (Bernstein and Cashore, 2010). FSC certification created binding and enforceable rules to advance sustainable forestry practices, effectively acting as a private form of international governance, deriving authority directly from participating firms, NGOs and other interested parties, and not from sovereign states (Cashore, 2002; Bernstein and Cashore, 2007). FSC has three representative chambers: social, economic and environmental, with principles guiding 'on-the-ground' operations and requirements for chain of custody tracking. Governments are not represented. FSC was intended to curtail logging in endangered forests and advance new rules and practices. The Canadian Standards Association (CSA) certification was introduced in 1996 as an industry counter to FSC, and since then, Sustainable Forestry Initiative (SFI) also emerged as the alternative preferred by many forest companies. Competition between certification systems has been intense, with the environmental movement and forest industry battling publically over which system is superior. Despite some challenges (Schepers, 2010), FSC remains the most supported by ENGOs, and holds the widest legitimacy among certification systems (Domask, 2003; Gulbrandsen, 2004). FSC is also regarded as an exemplar of successful non-state global governance systems (Pattberg, 2012).

Over the last 20 years, regional forest conservation campaigns have worked in concert with ENGOs globally to shift forest product supply chains away from endangered forest regions and towards sustainable, certified sources. Markets campaigns targeting popular brands and buyers of forest products have used regional campaigns as 'poster-children' to show

destruction and model the best practices of forest conservation. Canadian forests have featured prominently among these poster-children - notably in 1993 with Clayoquot Sound's coastal rainforests, expanding up the coast of British Columbia to the Great Bear Rainforest, and later targeting Canada's vast northern Boreal forests. The following section describes the emergence and scaling of this new campaign form as it was focused on the latter two examples, and compares their institutional impacts at the regional, national and global scales.

A New Model of Forest Campaigns and Multi-Sector Engagement

Conflict over clearcutting in British Columbia reached a pinnacle over the fate of Clayoquot Sound in the early 1990s (Bernstein and Cashore, 2000; Magnusson and Shaw, 2002; Wilson, 1998). International efforts by Greenpeace were branding Canada as "Brazil of the North", where logging companies' enormous ugly clearcuts were destroying ancient forests. Conflicts peaked in 1993, when peaceful protests involved over 10,000 people, and more than 800 protesters were arrested, which was the largest act of civil disobedience in Canada's history. Protestors gained significant national and international media attention, but failed to generate change in the forestry regime. When the provincial government remained committed to policies driving clearcutting in Clayoquot's last valleys, environmental leaders began targeting international customers of MacMillan Bloedel, the company logging in the region. Greenpeace, Rainforest Action Network, and the Clayoquot Rainforest Coalition identified large brand-name companies buying pulp from MacMillan Bloedel's Clayoquot operations, creating the first forest products markets campaigns (Berman, 2011; Cashore et al., 2002). These brand-tarnishing grassroots and media campaigns met with success, generating contract cancellations from two large buyers - Scott Paper and Pacific Bell. Faced with significant financial and reputational costs, MacMillan Bloedel offered to halt logging in Clayoquot Sound, inviting ENGOs and First Nations to directly negotiate a solution with them. Multi-lateral negotiations proceeded for several years, during which time the forest company announced it would stop clearcutting in old growth and would protect the intact valleys of Clayoquot

Sound. The province established the Clayoquot Sound Scientific Panel, including local First Nations, foresters and scientists. Panel recommendations were adopted by the Government of BC on July 6, 1995, establishing a new paradigm of ecosystem-based forest management in the region, protecting the remaining intact valleys, and establishing a First Nations-owned forest company, Iisaak, which would seek FSC-certification (Clayoquot Archives, 2013; Stanbury, 2000).

The settlement in Clayoquot Sound was the first time in Canada when First Nations' sovereignty rights were included an environmental agreement through co-management provisions (Shaw, 2004). The campaign and resulting Agreement generated a suite of innovative strategies for forest conservation that used market campaigns as a strategy to bring industry into direct negotiations outside of formal policy channels in a "safe space" to discuss radical reframing of the dominant forest management paradigm, without significant government participation. Solutions generated in this safe space were guided by science, and were eventually adopted by the provincial government. This suite of strategies has been consciously replicated and evolved by the participating coalition of ENGOs, in particular by Greenpeace, Rainforest Action Network, and the Clayoquot Rainforest Coalition, which later became ForestEthics. In British Columbia, these models included First Nations as co-decision makers and beneficiaries, though this did not translate into the Boreal Agreement.

The model of campaigns and solutions-development initiated in Clayoquot Sound was extended northward to BC's other large remaining rainforest - the Great Bear Rainforest, and to other regions in Canada. This scaling process involved escalating the conflict to successively larger numbers of forest companies, and focusing on ever-larger regions, with a greater number ENGOs, more affected First Nations, and increasingly complex jurisdictional contexts. The increasing scope and scale of three cases is shown in Table 6. The next section describes in more detail the process of institutional change that led to the Great Bear

Rainforest Agreement and the Canadian Boreal Forest Agreements, showing how each initiative moved through a period of deliberately cultivated institutional conflict, to a phase of institutional innovation, towards institutional restabilization (Zeitsma and Lawrence, 2010).

Case	Valleys	Land Area	Firms	First Nations (FN)	ENGOs	Jurisdictions
Clayoquot Sound	Five	350,000 hectares	One	Three	Four to Five	One land use table One province Three First Nations
GBRA	Hundreds	Seven million hectares	Five to Six	16-27 depending on definition	Three to Four	Two land use tables One province Twelve+ First Nations jurisdictions
CBFA	N/A	76 million hectares	21	None	Seven + Two funders	Seven provinces One nation + Hundreds of First Nations w/Treaty, legal and traditional rights

Table 6. Increasing Scope and Scale from Clayoquot Sound Land Use Plan, to Great Bear Rainforest Agreement (GBRA) and Canadian Boreal Forest Agreement (CBFA).

Great Bear Rainforest Agreement 1996 - 2013

Phase of Institutional Conflict 1996-2000

By the mid-1990s several ENGOs involved in Clayoquot Sound expanded their focus to the remaining old growth valleys on BC's pacific coast - an area they christened "the Great Bear Rainforest" (McAllister et al., 1997). The Great Bear Rainforest (GBR) was the largest unprotected coastal temperate rainforest worldwide, roughly the size of Ireland, at seven million hectares. It encompasses hundreds of intact temperate rainforest valleys that were home to the unique white 'spirit bear', grizzly bears, and 2000 year-old cedar trees. Over 10,000 First Nations live in the region, representing at least 27 culturally distinct Nations. First Nations communities in the region have lived with the negative social legacies of colonization and forced residential schooling. They have faced serious social problems, loss of their languages and traditional cultures, and limited economic opportunities as a result of historical exclusion from the benefits of forestry, fishing and other extractive industries (Prescott-Allen, 2005; Smith, Sterrit and Armstrong, 2007).

During 1996-2000 markets campaigns targeted companies operating in the Great Bear Rainforest, reaching markets in the US, Europe, Japan, and even China, which were responsible for over one billion dollars (CAD) of purchasing (Smith et al., 2007). ENGOs called on government to conserve forests and resolve Aboriginal Rights and Title. Aware of looming controversy, in 1997 the provincial government created two land use planning processes for the central coast and north coast regions of the GBR, inviting stakeholders from many sectors to participate (Tjornbo, Westley and Riddell, 2010). The process was undermined from the outset by ENGO boycotts and campaigns, and First Nations refusals to participate as "stakeholders" due to their unresolved legal claims to the land and related assertions of jurisdiction.

Throughout the 1990s, the forest industry and BC government financed counter-attacks against ENGOs in the media at home and internationally and funded education tours to Europe to reassure concerned customers, and producing brochures and television ads. The premier of British Columbia also publicly labeled environmentalists as the "enemies of BC" (Hoberg, 2001) for their markets campaigns. Despite these counter efforts, in 1999, Home Depot, the world's largest solid wood retailer, committed to stop sourcing wood from endangered forest regions after several years of concerted grassroots and market campaigns led by Rainforest Action Network. By 1999, coastal companies were under significant pressure from key European and American buyers, and hundreds of millions of dollars of contracts had been cancelled (Riddell, 2009). Over 80 companies had made commitments to phase out endangered forest products, including Home Depot and Lowe's, IKEA, Nike, Dell and IBM (Riddell, 2009). Senior forest company representatives met in 1999, agreeing to transform their approach to the coastal conflict, through a negotiated resolution process (Smith et al., 2007). By this point, the conflict had reached such intensity that coastal forest companies and

government admitted they had lost the social license to operate, and a more radical approach was necessary to find lasting peace.

Both sides warily entered into negotiations with a skilled facilitator, while clearcut logging in the region and markets campaigns continued. Both ENGO and forest industry negotiators took risks by engaging in secret negotiations and entertaining new practices and perspectives that were far outside their normal frame of reference (Riddell, Tjornbo and Westley, 2012). In 2000, after over a year of negotiation, the parties signed a 'Standstill Agreement' where ENGOs agreed to suspend their markets campaigns and companies placed a logging moratorium over 100 valleys, thus creating a 'solutions space', where the parties could more safely explore how to solve their conflict. ENGO-industry negotiations were to proceed alongside formal land use tables, with the understanding that an eventual solution would be incorporated into the formal tables.

Phase of Institutional Innovation and Restabilization 2001 - 2014

Greenpeace, ForestEthics, and the Sierra Club of BC participated in negotiations via a formal coalition - the Rainforest Solutions Project (RSP). The five represented companies created the Coast Forest Companies Initiative (CFCI) to coordinate their participation, and the two sides came together under the umbrella of the Joint Solutions Project (JSP) - a structure that also coordinated wider dialogue with First Nations, the BC government, labor groups, and local communities. JSP became a venue for sharing information, discussing new policy and regulatory models, and testing out-of-the-box thinking (Smith et al., 2007). First Nations formalized their relationships with one another via the Coastal First Nations alliance, and government and coastal communities established parallel vehicles for collaboration. BC government representatives were kept abreast of the JSP's progress, and government was largely resigned to allow multi-lateral negotiations to proceed in parallel to formal Land and Resource Management (LRMP) processes, with the promise their solutions would be

incorporated.

In 2001 the provincial government announced a "Joint Solutions Framework" involving several elements. The BC government signed historic government-to-government protocol agreements with eight Coastal First Nations, acknowledging their shared jurisdiction (Central Coast Land and Resource Management Plan, 2004). The framework included an independent scientific panel – the Coast Information Team (CIT) - tasked with determining which areas needed protection, and developing forest management practices to meet the highest conservation standards. Parties agreed to adopt ecosystem-based management (EBM) principles and goals, which emphasize that healthy ecosystems form the basis of healthy communities and economies – representing a significant shift from the dominant sustained yield forest management paradigm. They also agreed to pursue efforts at economic diversification away from natural resource extraction towards a "conservation-based economy". This included a $35 million transition package for displaced workers, and plans to raise a $120 million conservation investment fund.

Turning this framework into a substantive plan took five years. The CIT conducted ecological and socio-economic research, developed recommendations for the land use planning tables, and created a framework and guide for the new forest management regime. Individual First Nations pursued community land-use planning, and community pilot projects were initiated to apply new business concepts and ecosystem-based management (EBM) forestry. ENGOs, First Nations and government created a joint financial initiative called the Coast Investments and Incentives Initiative (CIII), and ENGOs took the lead to raise $60 million of philanthropic capital for conservation investments, which was later matched by government to complete the $120 million fund.

In 2004 government land-use planning tables of the central and north coast came to

consensus recommendations regarding protected areas and EBM forestry. In a parallel process, First Nations and the province of BC, took the recommendations of the LRMPs into a final "government-to-government" decision process. In February 2006, the final Great Bear Rainforest Land Use Decisions were announced, formalizing the collaboratively developed policies and legal agreements. The final policy package represented a significant transformation of management to adaptive, ecosystem-based forest management and Forest Stewardship Council-certified logging. Furthermore, over 33% of the region (2 million hectares) was protected under the new designation of Biodiversity Areas and Conservancies. New legal designations were also created to allow First Nations cultural uses in protected areas. The $120 million CII fund was divided to support permanent conservation endowment to finance ecosystem protection and management on public lands, and the other half to support ecologically sustainable First Nations businesses and economic development (Armstrong, 2012; Price et. al, 2009).

In March 2009, after tough negotiations on EBM implementation, the full Agreement entered into force, and ENGOs and forest companies have jointly endorsed EBM guidelines that would lead to 70% old growth retention in cut areas. The CFCI (2013) reported that there was a 35% drop in the Annual Allowable Cut between 2001 and 2009, and that cutblocks have been reduced in size from 1996 to 2013. Legal designations were completed in 2009 for 137 new protected areas, with the GBR Agreement leading to a 350% increase in parks and conservancies (CFCI, 2013). CFCI companies achieved FSC certification for the mid-coast timber supply area in 2009. These changes reflect a radical transformation in the dominant forest regime in the Great Bear Rainforest. Signatories and academics alike laud the Agreement as a global model of transformation to sustainability (Armstrong, 2012; McGee, Cullen and Gunton, 2009; Smith, Armstrong and Sterritt, 2010). The elements of institutional change involved in this case will be described in detail in the section following the case description of the Canadian Boreal Forest Agreement.

Canadian Boreal Forest Agreement 2002 - 2013

Phase of Institutional Conflict 2002-2008

In 2002, while negotiations proceeded over the Great Bear Rainforest, forest campaigners with Greenpeace and ForestEthics expanded market campaigns to Canada's northern Boreal forests. Canada's Boreal is the world's largest intact area of forest and wetlands, spanning about 310 million hectares. It includes the traditional territory of about 150 First Nations. The ecologically rich region contains over one million lakes, is home to the iconic and endangered woodland caribou, and is breeding ground to billions of migratory songbirds. More than 208 billion tons of carbon - equivalent to about 26 years of global greenhouse gas emissions - are stored in the Boreal.

The Boreal forest represents a very important fibre source to the Canadian forest industry, because of its vast size. Industrial activity is administered across seven provincial jurisdictions with differing rules and regulations for forest practices and land management. By 2005, 45% of the Boreal had been allocated to industrial development, and new northern Boreal forest allocations were pending in Ontario, Quebec and Alberta. Woodland caribou were listed as threatened under a new federal Species At Risk Act (SARA), which came into force in 2005. This required provinces to create regional recovery plans with statutory deadlines. Manitoba, Ontario, Quebec, and Newfoundland had also developed new endangered species legislation, where (boreal-dwelling) woodland caribou was listed as a priority species. Taken together, new land use planning and endangered species requirements were poised to interact in complicated ways through a patchwork of provincial jurisdictional rules and planning requirements affecting the Boreal. Forest companies faced economic and harvesting impacts on caribou-inhabited forestlands, and additional administration, planning, and operational requirements, which would add time and cost to forestry operations. At the same time,

environmentalists were looking for ways to address ongoing fragmentation of caribou habitat and advance more comprehensive conservation planning across the Boreal.

The Forest Products Association of Canada (FPAC) was formed in 2000 to represent over 20 companies who controlled about 75% of Canada's tenured lands. FPAC became a strong voice that enabled the forest industry to act together to respond to ENGO market campaigns. With FPAC's guidance, the forest industry spent the decade between 2000 and 2010 positioning itself as a sustainable industry of the future, through initiatives to achieve carbon neutrality and mandatory third party forest certification, among other things. In 2000, only a very small area of Canada's forests was certified, but within ten years almost 150 million hectares (42%) were certified by one or more popular standards (CSA, SFI or FSC), giving Canada the largest area of certified forest in the world (NRCAN, 2011).

International scrutiny on the Canadian forest industry was increasing between 2003-2006 as a result of ENGO campaigns. Public campaigns called on governments to enact strong caribou conservation policies. ENGO researchers discovered that Boreal pulp was sought after by well-known brands in the magazine and paper industry, including Victoria's Secret lingerie and Kleenex tissues. Greenpeace launched their *Kleercut* campaign in 2004 against Kimberly-Clark's Kleenex brand and ForestEthics targeted Victoria's Secret lingerie catalogues. Forest companies Weyerhauser and West Fraser Timber Co. were logging in Boreal caribou habitat and supplying magazine pulp to Victoria's Secret, which mailed out one million catalogues each day (Berman, 2011). The campaign was dubbed "Victoria's Dirty Secret", and featured a newspaper 'subvertisement' of a bustier-clad woman holding a chainsaw and wearing Victoria's Secret trademark angel wings, calling on the company to stop destroying forests.

Despite FPAC's parallel efforts to green Canada's image, ENGO markets campaigns gained momentum, and the Canadian forest industry experienced a growing sense of risk

from campaigns. One industry representative noted that "Brand Canada was being tarnished" and this even impacted companies selling the ENGO-endorsed FSC-certified Boreal wood. In 2006, Victoria's Secret's parent company, Limited Brands, announced the cancellation of large contracts for Boreal-sourced pulp from the Hinton mill in Alberta, and voiced their intention to seek FSC-certified alternatives. Senior executives from Limited Brands held meetings with forest company executives and provincial decision-makers to advocate for Boreal conservation. In response to the contract cancellations and related media attention, the Forest Products Association of Canada charged that ForestEthics was campaigning with distorted information, countering that Canada had no net deforestation, and was a world leader in sustainable forestry techniques (Struck, 2006). Between 2006 and 2007 member forest companies asked FPAC to develop a public relations 'counter-spin' campaign to challenge environmentalists' claims. At the same time, key industry leaders in FPAC began to feel it might be strategic to engage ENGOs earlier and from a position of strength before ENGO campaigns did significant material damage. Direct engagement with ENGOs had the potential to both end negative campaigns and advance pan-Boreal solutions to meet caribou planning requirements and secure market access.

Phase of Institutional Innovation 2008 - 2010

By 2007, the stage was set for a new direction. As conflict escalated between ENGOs and several forest companies, in particular between Greenpeace and Abitibi-Bowater, the CEO of FPAC, Avrim Lazar, made overtures to ENGO leaders from the Canadian Parks and Wilderness Society (CPAWS), ForestEthics and others, along with Ivey Foundation and Pew Environment Group, about a possible Boreal-wide engagement. In fall 2007, the FPAC board, comprised of forest company CEOs, authorized a proactive Boreal engagement strategy. For the next several months the elements of a solutions process were advanced. Trust established from follow-through in previous collaborations helped to provide assurances to forest company executives that environmental organizations were capable of good faith negotiations.

FPAC conducted a conditions analysis of the potential negotiations process, and learned more about the Great Bear Rainforest Agreement model. The presence of environmental foundations also crystallized the value proposition for forest company participation – assuring industry that money spent on campaigns would be redirected towards an engagement process. ENGOs evaluated if industry was open to the large-scale changes they sought, and whether they had generated enough leverage through their campaigns to impel such change.

Secret negotiations formally began in June, 2008, involving seven ENGOs, two environmental foundations, and FPAC and its 21 member companies. FPAC engaged Dan Johnston, who facilitated the Joint Solutions negotiations in the Great Bear Rainforest. Eventually a senior team of five representatives from each caucus conducted negotiations. Two senior forest company executives involved in Boreal negotiations had also been through the conflict on BC's coast, and the main ENGO negotiator, Tzeporah Berman from ForestEthics, had led protests and negotiations in Clayoquot Sound while working with Greenpeace, and participated in Great Bear Rainforest negotiations as part of the ENGO caucus.

The parties began by developing a common vision, and identifying shared interests and principles, including a commitment to be guided by independent science. First on the agenda was creation of a 'cease-fire' that would halt logging in caribou habitat and suspend market campaigns, which took almost a year to negotiate. On April 1st, 2009, companies placed more than 28 million hectares of caribou habitat in voluntary deferral, representing 98% of the boreal caribou range in FPAC member tenures. Markets campaign groups agreed to suspend divestment and 'Do Not Buy' campaigns against FPAC companies. Parties began to develop trust and a common vision, getting to know one another and 'humanizing' their opponents. The focus on solutions was critical, and ENGO and industry leaders developed the capacity to take one another's perspectives and bridge between differing positions. Representatives of

both sides credit the senior negotiators with being able to work with conflict and stay engaged with honest emotionality when disagreements arose.

Negotiations coalesced around six goals, with forest certification emerging as the most contentious. The issue was symbolic and emotional, and one company executive described competition between FSC and Sustainable Forest Initiative (SFI) a "battle to the death". Several ENGOs had invested for decades to grow marketplace demand for FSC, and believed that SFI and the Canadian Standards Association (CSA) certification systems were "certified industrial status quo". These groups wanted companies to make FSC commitments as a condition of any Agreement. The 21 negotiating companies held commitments to various certification systems, with some like Tembec being fully FSC-certified, and others such as West Fraser and Weyerhauser being strongly invested in SFI. Ultimately, to resolve the impasse around certification, ENGOs relinquished their demand for FSC. The parties agreed to "on-the-ground sustainable standards of forest practices" that would be unique to the Boreal, but would apply FSC's National Boreal Standard as a reference point (excluding the socio-cultural aspects). Logging practices at the stand-level were to draw on ecosystem-based management, elements from CSA and SFI certification systems and active adaptive management, leading to third-party verified "world-leading practices" (CBFA, 2010). Once certification was addressed, the last elements of the agreement were finalized and ambitious implementation milestones were developed.

From Institutional Innovation to Implementation Challenges: 2010 - 2013

On May 18, 2010, ENGOs, forest companies and FPAC announced "the largest conservation agreement the world has ever seen" (FPAC, 2010), which initially encompassed 72 million hectares of Canada's Boreal forests across seven provincial jurisdictions, with

signatories from 21 major forest companies and nine environmental groups[1] (CBFA, 2010). Under the Canadian Boreal Forest Agreement (CBFA) logging deferrals and market campaign suspensions would continue for three years while signatories collaborated to advance the six Agreement goals aimed at sustainable forest practices, completion of protected areas, recovery of species at risk (caribou), GHG reductions, improving prosperity for the forest sector and communities dependent upon it, and marketplace recognition. The CBFA described systems of mutual accountability coordinated through a joint CBFA Secretariat structure, with milestones connected to each goal, and independent assessment and progress reporting (CBFA, 2010).

During early stages of the Agreement, the parties intended to focus on bi-lateral development of caribou action plans and protected areas proposals for government, producing ecosystem-based management guidelines for companies, and outreach to governments and communities. The intention was to complete the ecological elements of the plan by its third anniversary in May 2013. However, since 2010, signatories have faced financial and human resources constraints, making them unable to meet the majority of the Agreement's ambitious milestones and timelines (Gunn, 2013). Further complicating implementation, the Agreement goals addressing climate change, protection of species, protected areas establishment, and cut volume allocations, are beyond the direct control of the forest industry and ENGOs, requiring government regulation and involvement of First Nations. This necessitates differing timelines in order to connect with regional policy opportunities across the country, and navigation of very different political contexts. Succession has also been a factor, as the primary negotiators, Avrim Lazar from FPAC, and Tzeoporah Berman from ForestEthics, are no longer with those organizations. Two senior forest company executives from Canfor and West Fraser Ltd. who were instrumental in negotiating the Agreement have also retired.

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[1] As of July 2014, the CBFA area was increased to 76 million hectares, with 19 signatory companies and seven ENGOs. See Appendix D for a full list of signatories.

Upon its announcement, the CBFA met with significant resistance from some First Nations. Neither community representatives nor Aboriginal, First Nations or Métis people were directly involved in negotiations, though some consultation and information-sharing occurred. Some of the most vociferous opponents are the Nishnawbe Aski Nation (NAN), which represents 49 First Nations of Treaty 5 and 9 regions encompassing about two-thirds of Ontario. In an open letter, the NAN called for the immediate termination of the CBFA, stating "We can only characterize it as an international disgrace and tragedy, similar in its moral dimension to the worst excesses of the Canadian colonial past. The boreal forest agenda, including the CBFA, is being undertaken devoid of respect for Indigenous Peoples' rights." The Assembly of First Nations, a Canada-wide organization, passed a consensus resolution on December 16th, 2010 asserting "First Nation jurisdiction over traditional territories, climate change issues, the low-carbon economy, forest tenure, biodiversity and traditional uses" (AFN, 2010). They further "condemn[ed] the disrespectful manner in which the Canadian Boreal Forest Agreement was negotiated", rejected its effect in the traditional territory or resource management area of any First Nation, and demanded its termination (AFN, 2010). Additional resistance came from the Algonquin Nation Secretariat which represents the Algonquin First Nations of Timiskaming and Wolf Lake, who asserted their Aboriginal Title and Rights to territory in Quebec and Ontario, and the Manitoba Keewatinowi Okimakanak, which represents 30 First Nation communities whose traditional territories cover three-quarters of the province of Manitoba as well as portions of Saskatchewan, the Northwest Territories, Nunavut and Ontario (CNW, 2010).

By the Agreement's second anniversary in 2012, only 17 of 78 implementation milestones had been met (Greenpeace, Canopy and ForestEthics, 2012). The failure of progress caused Greenpeace to formally withdraw from the CBFA in December 2012, and Canopy to follow suit in April 2013 (Jang, 2013). Between 2010 and the third anniversary in May 2013, no new

provincial regulations or protected areas had been legislated. Only one Caribou Action Plan, for Ontario's Abitibi forest, had been jointly proposed, although this was actually initiated prior to the CBFA. No 'Protected Areas Plans' have been jointly proposed under the CBFA, and the ecological elements of the agreement were not achieved by the third anniversary. Greenpeace (2012), stated upon their departure "we conclude that the CBFA is no longer a credible environmental initiative" and Canopy shared "the disappointing reality is that not one hectare of forest has been protected and species are still at risk" (Canopy, 2013). In statements to the media, Canopy and Greenpeace stated their ongoing commitment to collaborate with companies seeking real impact, and to continue work to shift markets and educate buyers (Canopy, 2013; Greenpeace, 2012). Other signatories remain committed to the process, but admit progress has been far slower than anticipated. Despite some significant setbacks, implementation work continues at the national level via the CBFA Secretariat, and with regional working groups moving forward with land use planning in Alberta, Saskatchewan, Manitoba and Newfoundland.

Discussion

*Institutional I*mpacts *from the GBRA, CBFA and Market Strategies*

This section compares the systemic impact of the Great Bear Rainforest (GBRA) and Canadian Boreal Forest Agreements (CBFA) and briefly summarizes the wider global impacts of market campaigns and forest certification, using a framework generated by applying social innovation and institutional lenses. In the first part of this section I apply this framework to analyze and compare the institutional impacts of the GBRA, the CBFA and global strategies of markets campaigns and Forest Stewardship Council (FSC) certification. I also discuss whether they represent incremental or systemic change. Next, I describe several process-related factors that affect the differing systemic impacts, which relate to the founding context, emergent conditions and actor strategies during different phases of institutional change. This section

answers my first research question: *How can the systemic impacts of social innovation be identified and evaluated?*

The framework presented here compares institutional change along different dimensions, based on the three pillars of institutions: regulatory, cognitive and normative (Scott, 1995) and elements of Westley and Antadze's (2010) definition of social innovation as profound change to the basic routines, resource and authority flows, or beliefs of a social system. The focal system being evaluated is the forest regime in each region, which is at the level of "organizational field", or the shared institutional context of the incumbent forestry regime (DiMaggio and Powell, 1983). The table shown compares aspects of institutional change in forest regimes that have resulted from the GBRA and CBFA, over a specific time period, with the initial date signifying initiation of efforts at institutional change, and an end date of 2013, when the research ended.

Drawing on Hargrave and Van de Ven's (2006) definition of institutional change as a difference in form, quality, or state over time in an institution, Table 7 below shows the result of comparing institutional arrangements between two points of time, with an emphasis on areas of significant novelty or discontinuity from the past. The table documents systemic impacts that resulted from the GBRA and CBFA, showing the greater institutional impact of the GBRA than the CBFA over a given time period in the following dimensions of change:

1) Formal governance: regulations and laws;
2) Informal governance and stakeholder rules;
3) Knowledge, practices and routines;
4) Cultural norms and discourse; and
5) Distribution of power and resources.

Change Over Time (+ or -)	Great Bear Rainforest: Forest Regime Changes 1995-2013	Canadian Boreal Forest: Forest Regime Changes 2000 - 2013
1) Formal Regulatory and Legal Change	(+) First Nations co-management relationship enshrined in law (+) EBM and adaptive management legislated (+) 2.7 million hectares rainforest protected	(0) No new provincial or federal governance arrangements (0) No legislation of protected areas or forest policy
2) Informal Governance & Rules	(+) "Spirit and Intent" of Agreement upheld (+) FSC certification required of all GBR companies (2006); (+) global ENGO network "gatekeepers" of forest policy	(+) CBFA binding goals, milestones and new science (+) 29 million ha. caribou habitat in *temporary* deferral (+) Regional working groups, collaboration practices (-) Most milestones not met: ecological elements incomplete by May 2013; no Protected Area Plans
3) New Knowledge, Practices and Routines	(+) Knowledge from CIT and EBM guides implementation and new practices; (+) Social, cultural, economic and ecological health linked (+) Knowledge from GBR spreads to CBFA & global campaigns; (+) Co-management practices adopted and collaboration routinized	(+) National data collection and integration, shared mapping; national management and recovery planning for caribou; (+)"Top-flight" science and inter-regional knowledge transfer via CBFA (+) FPAC companies accept 'FSC-plus' practices; (+) New ENGO-Industry working groups (0) Little change of practices on the ground
4) New Cultural Norms and Discourse	(+) Paradigm shift from "Sustained Yield" to "EBM"; and from conflict to "win-win" (+) Human well-being" part of planning; (+) Industry needs "social license"; (+) BC rainforests "globally significant"; (+)"government-to-government" relationship	(+) Forest certification new Canadian norm (+) Narrative change from conflict to "win-win" (+) Regional working groups spread CBFA norms; (0) Dominant forestry paradigm not challenged but environment, economy linked; (-) Some First Nations oppose or condemn CBFA and invoke discourse of International Indigenous Rights
5) Redistribution of Power and Resources	(+) First Nations co-management of land and resources, inclusion in local economic decision-making; (+) ENGOs involved in EBM development and policy implementation (+) $120 million CIII fund for FN community development; (+) New government and company investments in adaptive management	(+) Time & new resources invested in CBFA and new regional processes (+) Parties invest in collaboration. (0) Canadian government funds CBFA (0) Doesn't challenge underlying economics or beneficiaries of industrial forest model (0) No conservation financing (-) CBFA under-resourced (-) Lack of inclusion of First Nations

Table 7. Dimensions of Systemic Change in the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement

The GBRA and CBFA were intended to implement changes to the forest regime toward greater health of ecological and human social systems by managing them more adaptively and according to an ecosystem-based approach. In the Great Bear Rainforest Land Use Agreements, the CIT (2004, p. 3) defined EBM as "an adaptive approach to managing human activities…to ensure the coexistence of healthy, fully functioning ecosystems and human communities." The GBRA also enshrined co-management with First Nations and community economic development initiatives, whereas the CBFA specifically sought greater prosperity for the forest industry. Positive changes towards these institutional goals are denoted as (+), no change is denoted as (0) and negative changes are denoted as (-) and indicate where a situation

is undermining the possibility of achieving the Agreement goals.

Institutional Change in the Great Bear Rainforest Forest Regime 1996 - 2013

The Great Bear Rainforest Agreements, finalized in 2006 and fully implemented with EBM in 2013, represent a clear change in *formal regulatory and policy change*. First Nations co-management was established across the region, beginning with Protocols signed in 2001, culminating in government-to-government negotiations between the province of British Columbia and coastal First Nations after the LRMP forwarded a consensus recommendation. The GBRA is one of the world's largest legislated models of integrated conservation, with new land and protected areas designations, and as of 2013, the full implementation of EBM (Hoekstra, 2014). It is also one of the largest regions globally to have aboriginal co-management and transparent adaptive governance structures (Price et al., 2009). While the regional forest regime has been significantly transformed through the GBRA, these new forms of governance do not extend province-wide, where the dominant extractive paradigm continues to operate. Changes in forest policy and governance also have little influence on other industries in the region. Many protected areas allow mining exploration, and the region is under significant pressure from liquefied natural gas and pipeline developments.

Informal governance and rule changes complemented the new formal governance direction, and included substantial new forms of shared responsibility and accountability, and the increase in soft law and informal mechanisms to advance joint policy goals (Raitio and Saarikoski, 2013). Government, industry, ENGOs and First Nations in the Great Bear Rainforest were highly interdependent in their ability to realize progress toward an eventual agreement. The provincial government became dependent upon institutional arrangements and decision-making processes created and driven by civil society and market actors, with the bi-lateral Joint Solutions Project essentially acting as a gatekeeper to the province's coastal rainforest policy (Raitio and Saarikoski, 2013, p. 911). The fulfillment of informal agreements

has been enabled through ongoing investment into Coastal First Nations, the ENGO collaboration Rainforest Solutions Project (RSP), and the company umbrella group Coast Forest Conservation Initiative (CFCI). These informal rules and agreements provided robustness to formal institutional changes.

Even prior to new formal rules, the parties invested substantially in *new knowledge* creation and the analysis necessary to develop ecosystem-based management through the Coast Information Team (CIT) science panel. Traditional First Nations ecological and management knowledge also became increasingly shared and valued during the GBRA process. EBM deconstructed previous institutional assumptions that economic and social good were synonymous, emphasizing human well-being instead, which linked social, cultural, and ecological aspects of health. These new knowledge frameworks undermined previously dominant institutional assumptions surrounding industrial forestry, advancing local perspectives on community economic development and moving beyond the use of forest company profit as a proxy measure for social well-being in remote First Nations communities. The new knowledge also informed conservation investment strategies to create more appropriate and conservation-oriented economic vehicles through the $120 million dollar endowment and investment funds.

The formal and informal arrangements under the GBRA were operationalized through *changed practices* of communication, consultation and decision-making. As the Agreement is further implemented, stabilization of new operational practices and procedures aligned with new knowledge will be critical to the process of institutional change, particularly in terms of how managers and stakeholders translate the "spirit and intent" of informal and adaptive management mechanisms into routinized practice. EBM ushers in a new suite of forestry practices and companies have sought FSC-certification for their operations. Co-management

practices between government and First Nations are guided by protocols and government-to-government Agreements.

Significant *cultural and normative change* occurred as a result of the processes leading to the Great Bear Rainforest Agreement, wherein stakeholders in deep conflict established consensus, transforming a polarized culture and discourse of "war" to one of collaboration and "win-win". ENGOs and forest companies, through their self-initiated conflict resolution process, catalyzed this change in the norms and culture of engagement. Prior to collaboration, however, successful institutional challenges undermined the cultural legitimacy of the current forestry regime, generating pressure on forest companies logging on public lands by revoking their "social license" to operate, which refers to their legitimacy, credibility and trust within the community. Social license, and other new narrative frames were introduced into the discourse throughout this campaign and resolution process. The region's renaming to "the Great Bear Rainforest" by ENGOs fighting for its protection, and its status as "globally significant" facilitated campaigner access to international customers and media and supported new narratives about the value and appropriate management of the region. ENGO campaigns succeeded in destabilizing the dominant institutional discourse and norms guiding forestry in the region through narratives and active customer engagement with the provincial government and forest companies, fuelling fears of further marketplace reprisals and financial loss. Intense conflict during the "war in the woods" created pressure to find a solution, and specifically a solution that environmentalists and First Nations were involved in crafting and would endorse. New institutional arrangements and norms developed through the solutions process represent a profound paradigm or organizational field-frame change: from extraction-based sustained yield forest management, to ecosystem-based management and adaptive, co-management principles and a regional "conservation-based economy". In its story of collaboration and multiple values being protected, the GBRA represents a significant, discontinuous change in the culture, norms and discourse guiding the industrial forestry

regime in the region.

New power and resource flows also resulted from the formal rule changes and surrounding strategies, most fundamentally through affirming First Nations' status as governments through the formal "government-to-government" final negotiations that preceded legislation of the GBRA, and the legal co-management arrangements. The new EBM guidelines and co-management structures enshrined a new powerful role for First Nations, formalizing their participation as legitimate levels of government in local economic and land use decision-making. The new powerful alignment between the interests of environmentalists and First Nations was also both a catalyzing factor giving rise to the Agreement, and now is a bond of trust that continues into other collaborations. For example, the Coastal First Nations coalition in the Great Bear Rainforest, led by Agreement veteran Art Sterritt, are powerful and vocal opponents of Enbridge's controversial Northern Gateway pipeline proposal which would send bitumen from Alberta's oil sands to a port and tanker route located in the GBR and then onto tankers through the protected fjords of coastal First Nations territories (Coastal First Nations, 2014). Coastal First Nations are launching legal challenges in an effort to stop the proposed pipeline from being built, with fundraising efforts supported by ENGOs such as the Sierra Club of BC and ForestEthics. This coalition of interests was built over more than a dozen years of successful collaboration between ENGOs and First Nations that was required to gain implementation of the GBRA.

New resource flows include innovative resource blending to fund new science. The Coast Information Team's (CIT's) scientific work and the conservation financing vehicles that were available to First Nations that chose to protect larger percentages of their traditional territories from logging were collaboratively funded by private and public sources. As described above, environmentalists, First Nations and the Province of BC collaborated to raise $120 million dollars of "conservation investment" for the Coast Opportunities Fund (COF) and Economic

Development Fund (EDF). The COF enabled First Nations-led stewardship and monitoring programs such as the Coastal Guardian Watchmen and Resource Stewardship Offices, and the EDF has funded regional community businesses advancing sustainability goals, such eco-tourism, shellfish aquaculture and carbon offsetting.

Institutional Change in the Canadian Boreal Forest Regime 2000-2013

Signed in 2010, the CBFA is still nascent in its implementation, and it has not yet achieved *formal regulatory or policy change* across any of the seven relevant provincial jurisdictions. The most recent independent progress report, released by KPMG (Gunn, 2013) affirms that progress has been very slow. When Canopy left the agreement in April 2013, no areas had been formally protected as a result of the CBFA (Canopy, 2013). Only one of 51 Caribou recovery plans had been completed and jointly proposed by ENGOs and forest companies, which represents only 4% of the total CBFA area, despite a stated goal that all such plans would be completed in 2012 (Canopy, 2013; Gunn, 2013). As of 2014, no new formal regulatory or policy changes had resulted from the CBFA. No protected areas have been legislated to protect caribou, and no new formal forest management policies have been adopted in any provincial jurisdictions. A final challenge is that, as with the Great Bear Rainforest Agreement, the CBFA only deals with the forest sector and forest practices. Development pressures from mining, oil and gas, and infrastructure development have the potential to undermine ecological protection efforts that originate in the forest sector, unless other industries are proactively brought into the discussions by signatories and provincial governments responsible for land use planning.

The *informal governance* structures and processes, and strong bi-lateral stakeholder rules laid out in the CBFA have succeeded in changing relationships, routines, practices and decision-making between ENGOs, FPAC, and signatory companies. Canada now has 42% of all certified forests worldwide and 25% of the world's FSC certified forests (Canadian Forest

Service, 2008). This adoption of informal governance systems is partially due to the history of strong ENGO campaign focus on Canadian forests, and FPAC's desire to secure market access. With the exception of the National Caribou Recovery Strategy under the Federal Species At Risk Act, there is an absence of pan-Boreal land use governance institutions in Canada. As a result, the CBFA represents a fundamentally new governance structure for the boreal region, albeit an informal one. Since the CBFA process began, many new gridlines of communication, knowledge sharing and stakeholder relationships have emerged, along with collaborative courses of action. Yet, despite the promise of informal stakeholder processes, half of those interviewed by KPMG (Gunn, 2013) affirmed they did not have sufficient time to fulfill their obligations under the CBFA, and both regional working group productivity and decision-making efficiency have been low. This lack of capacity and the difficulty of translating informal bi-lateral agreements into broader institutional changes mean that while informal governance processes are a pre-occupation of the CBFA signatories, they are not necessarily effective at changing the broader operation of institutions.

The informal rules agreed to under the CBFA include ecological goals for caribou protection, climate change, and new forest practices. However, they cannot, in their own, challenge the dominant forestry paradigm or socio-economic structures surrounding the forest industry in the Boreal. The informal governance agreement under the CBFA specifying temporary logging suspensions on 29 million hectares of caribou habitat from 2009 rendered 98% of caribou habitat voluntarily off-limits to companies. Technically, this aspect of the 'cease-fire' expired in 2012, while the CBFA Secretariat claims it remains in place (Gunn, 2013). KPMG urged the Secretariat in their 2012 independent report to formally re-affirm the areas of suspended harvest (Gunn, 2013), and Canopy claimed upon their withdrawal from the Agreement that despite repeated requests, forest industry members were unwilling to provide maps or confirm where harvesting suspensions remain (Canopy, 2013).

New knowledge is being generated through the CBFA, through integration of data sets that were previously in isolation, and new pan-Boreal data collection and mapping. Implementation activities are focused on formulation of national management and recovery planning for caribou and the development of "top-flight" science to guide location of protected areas proposals. This knowledge is being shared through the national CBFAS structures and the regional working groups, underpinning the new informal institutional processes and ongoing stakeholder work to advance the Agreement goals. National and regional work occurring through the CBFAS has led to *changed practices* of collaboration, communication, and decision-making between ENGOs, FPAC, and forest companies operating in the Boreal. At the regional level, CBFA working groups have broadened to include government, First Nations, and other local stakeholders, thereby introducing the Agreement's goals, frameworks and practices to a wider audience. FPAC companies have accepted 'world-leading' practices in theory, although ENGOs are charging that there is little change on-the-ground.

The *new culture* of collaboration and shared articulation of goals under the Agreement has the potential to integrate fragmented provincial policies, and to lead them away from sustained yield assumptions towards ecosystem-based management norms and practices, but this has not yet occurred in a substantive way. FPAC and individual companies have adopted changes in language and behavioral norms related to the necessity of conservation planning, caribou recovery, and ecologically sound forest practices. Even prior to the CBFA, forest certification had become a new norm, influenced by ENGOs success in establishing FSC and harnessing marketplace concern. In response to market campaigns, forest companies have become much more attuned to the need for social license in addition to formal government approval for their operations. The CBFA also formally linked ecological and economic objectives, enabling a new discourse to emerge from both parties. CBFA representatives from companies and ENGOs publicly emphasize both industry's need to achieve economic gains

and certainty of fibre access, the importance of protecting ecosystems and Caribou, and the possibility to achieve these together. However, while ecological and industry economic prosperity messages dominate the new framing and language, the wider social and economic needs of First Nations and forest-dependent communities have remained unarticulated. In this way, the CBFA reproduces the dominant institutional assumption that communities benefit from industrial extraction activities, without critiquing this or incorporating alternative community economic development models.

Initially due to the CBFA process, there was a *redistribution of power* between the forest industry and ENGO signatories, where they began to play complementary rather than antagonistic roles in advocating to provincial governments for CBFA implementation, and the industry participation legitimized the need for comprehensive and sweeping conservation measures to ensure caribou survival. Yet, the two parties have not yet been able to mobilize shared their power to accomplish legislation in any of the seven jurisdictions, in order to protect caribou or legally establish new land use designations. Since the forest industry gained much of what they sought (cessation of negative campaigns, ENGO marketplace support) through the initial announcement of the CBFA, and the ENGOs have yet to achieve legislation for their protection goals, the dynamics of implementation may favour inertia, and certainly provide opportunity for the less enthusiastic signatory companies to engage in institutional resistance strategies, under the cover of a jurisdictionally complex and uncertain context (Lawrence, 2008).

The absence of First Nations leadership in the CBFA also indicates a lack of overall change in underlying power relationships, and as described above, some First Nations have expressed the view that it has had a negative effect on their self-determination rights. The CBFA has also been challenged in *redistributing resources* towards implementation, although the Canadian federal government did provide two million dollars to the CBFAS to support

implementation. The Agreement has been successful at redirecting ENGO resources away from negative campaigns against forest companies and towards collaboration and positive messaging in the marketplace, although ENGOs have been unable to raise significant new money to support their engagement in implementation efforts from environmental foundations. Finally, unlike in the GBRA, no capital was raised to support innovative community development initiatives or social enterprises, which is related to the lack of First Nations leadership in the CBFA.

Institutional Impacts of ENGO Global Strategies and FSC Certification

Changes in the forest regimes guiding management in the Great Bear Rainforest and Boreal forest were influenced by larger global institutional changes in forest markets, shifting consumption patterns, and demographic change (FAO, 2011). At the same time, ENGOs were advancing deliberate strategies to encourage forest conservation via their market campaigns, through the creation and advancement of FSC. This section summarizes the institutional impacts that ENGO market strategies and FSC have had on global forestry regimes from 1993 - 2013.

Cashore and Bernstein (2012) note that FSC standards have been adopted into *formal regulation and policy* in many countries, and FSC has directly influenced international rules. They also describe how FSC has influenced domestic policies, via its influence on international norms and discourse, and through creating and intervening in markets. While "certification wars" continue, FSC remains the most environmentally and socially credible (Domask, 2003; Clark and Kozar, 2011). As of 2009 FSC certified 2.7% of the world's forest area, with SFI and CSA at about 5% (FPAC, 2009; Clark and Kozar, 2011). In addition to influencing formal policy, FSC stands as the global exemplar of effective market-based voluntary standard-setting and chain of custody tracking. It has had tremendous success and impact as an *informal governance* mechanism and acts as a global and regional vehicle to create and influence relationships

between forest stakeholders including companies, small landholders, forest-dependent communities, indigenous people, environmentalists and other civil society representatives. In Canada, in particular, certification has been widely adopted. By 2008, Canada had more FSC-certified land than any other country – at 25% of the world total, and 25 million hectares (Canadian Forest Service, 2008).

The strategies and *new knowledge* generated by global networks of ENGOs focused on forest conservation campaigns have been shared extensively, most prominently through Greenpeace. The campaign and negotiations model from the GBR is used to train all new Greenpeace International campaigners (Stark, 2012, personal communication). Since its inception in 1993, FSC has cultivated a global network for knowledge-sharing and influence. These global networks share forest management knowledge, data, and technical and mapping knowledge, and track global "hot spots''. On a global scale, markets campaigns and forest certification have shifted the ways that wood and paper purchasing occurs, ushering in new supply chain management *routines and practices* (Cashore and Bernstein, 2012; Gritten and Mola-Yudego, 2010; O'Rourke, 2005; Pattberg, 2012). FSC has shifted the international policy debate on practices, normalized higher domestic standards, and driven adoption of new corporate procurement practices (Cashore and Bernstein, 2012; Pattberg, 2012). The number of voluntary corporate procurement policies for ecologically-responsible paper has increased from none in 1993 to 645 in 2013 (Environmental Paper Network, 2013), which represents both a change in informal rules, resource allocation and practices.

FSC has been credited with driving new *norms and discourse* globally, and for shifting the policy debate and affecting conceptions of corporate environmental responsibility (Cashore and Bernstein, 2012; Pattberg, 2012). FSC has influenced the widespread adoption of the term "high conservation value forests" into forest management discourse (Pattberg, 2012). The FSC logo on envelopes also became a symbolic norm in offices and mailboxes by the mid-2000s.

Two decades of ENGO marketplace campaigning has also shifted the debate on green consumption and acceptable forest management - both in concert with FSC and through their direct marketplace communications. In Canada, and elsewhere industry has been targeted successfully with markets campaigns, environmentalists' ecological conservation language and much of their narrative have been adopted by the forest companies and industry bodies, with FPAC being as a leader in this.

According to FPAC (2009) 10% percent of the global supply chain of forest products is certified by one of the three main certification systems, representing a *redistribution of resources* and pointing to the growing marketplace power of certification. While the three chambers of the FSC have helped to *empower* community, environmental, and indigenous groups who have typically been marginalized from forest governance, it has not challenged the supremacy of large forest companies and existing market arrangements, as, for example, Fair Trade certification seeks to do, by empowering local and small-scale producers (Taylor, 2002). In addition, despite the founding intention for FSC to influence practice in tropical forests, rapid uptake of FSC in northern forests - in particular in Canada - has led to a dominance of developed countries and temperate forest products being certified, which may exacerbate market access divisions and inequity between North and South (Pattberg, 2012).
Finally, ENGOs have found that engaged supply chains offer a source of power and influence that can be redirected towards new environmental and social problems over time. The success of markets campaigns has expanded the influence of large ENGOs, in particular Greenpeace, Friends of the Earth, WWF, Rainforest Action Network, ForestEthics, and Canopy. Market-based strategies have been expanded to far wider domains, and now address a suite of issues affecting forests from GMO crops, beef-raising and soya cultivation, as well as being utilized in campaigns around energy and climate, technology, and sustainability of marine resource supply chains.

Summary of Institutional Impacts

The findings above describe institutional changes that occurred over a given period of time as a result of the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement, as well as the broader marketplace change campaigns pursued by international ENGO networks. Based on the five dimensions of change described above, there is a disparity between the GBRA and the CBFA. The GBRA introduced greater discontinuous change and novelty into the institutions guiding the dominant forest regime, resulting in systemic change. In addition, both Agreements have been part of transnational efforts to shift the global supply chain towards more sustainable forest practices and purchasing, which have introduced significant novelty and also had system-wide impacts, although they have not led to discontinuous or transformative change to forest products markets. The Canadian Boreal Forest Agreement was negotiated on the historical backdrop of these campaigns, and was influenced by them, along with changing economic contexts and other regional and national political and social conditions. However, while it has resulted in significant changes in relationships and informal rules between ENGOs and forest companies in Canada, it has not led to alteration in the dominant institutional arrangements in terms of formal rules, forest practices, or distribution of power and resources.

In the Great Bear Rainforest, substantial institutional change occurred in between 1996 and 2013. During this period, changes included disruptions in existing social systems and institutions governing the forest regime, redistributions of power and resources to First Nations and ENGOs, legislation of new governance structures and policies, and a significant change in the paradigm guiding forest policy in the region. Formerly entrenched industrial forestry institutions, where forest companies and the provincial government were closely allied in valuing fibre extraction and narrow measures of economic benefit, have been replaced by a new governance regime with an adaptive decision-making process that enshrines social, cultural and ecological well-being as management goals. Formal regulatory change is

supported and enabled via extensive informal mechanisms for collaboration, and significant redistributions of power and resources. Based on the above assessment, the institutional changes to the forestry and land use management regime in the Great Bear Rainforest can be considered not only significant, but also discontinuous along multiple dimensions, given the profound reorientation of values, knowledge, governance forms, and stakeholder power resulting from the Great Bear Rainforest Agreement. As a social innovation introduced into a conflicted and complex problem domain, the GBRA and the process leading to up it, ushered in system-wide change.

For the Canadian Boreal Forest Agreement, signs of institutional change are evident from 2006 - 2013, yet a tremendous amount of work remains to secure formal policy or broader institutional impacts in any of the seven relevant provincial jurisdictions. It will likely take decades to be able to evaluate the impact of such far-reaching policy change aspirations. The CBFA has undoubtedly initiated informal collaborative working arrangements both nationally and regionally, guided by the goals of the CBFA. This is the most discontinuous change that occurred - introduction of informal pan-Boreal governance processes between FPAC, signatory companies, and ENGOs, informed by the spirit and intent of the CBFA, which is advancing both a new management paradigm and a new culture, engaging a breadth of stakeholders and First Nations through regional working groups. However, until this work is enshrined in formal regulatory changes, it cannot be considered to be an institutional innovation or a systemic change. Furthermore, while investments have occurred to develop new knowledge, this hasn't significantly changed forest practices on the ground. This suggests that industry may be using resistance strategies (Lawrence, 2008) or institutional distancing (Gray et al., 2015) to insulate themselves from the more radical potential impacts of the CBFA. The CBFA also did little to redistribute power and resources away from dominant institutional arrangements. The absence of ongoing conflict in the form of ENGO campaigns may hobble efforts to attain transformative policy outcomes, because the industry has retained

their legitimacy, and provincial governments who are making land-use decisions are not facing strong pressure to de-institutionalize the status quo. It seems more likely that the CBFA will guide and enable incremental changes over time, rather than catalyzing radical or discontinuous system-wide transformation. Reasons for this are addressed in more detail in the next section.

Factors Affecting Differences in Institutional Innovation

As described above, the Great Bear Rainforest Agreement has led to more radical institutional innovations than has the Canadian Boreal Forest Agreement. The impact of a social innovation is related to the elements that make it up, and the distinct constellation of relationships between these elements. In addition, the unique founding conditions, emergent opportunities and strategies employed during the process of a social innovation affect the trajectory and potential of a social innovation for achieving systemic impact (Westley and Antadze, 2010; Westley et al., 2014). This section describes key differences between the GBRA and CBFA in order to account for their differing systemic or institutional impacts and answers the second research question: *What insights are generated about the process and outcomes of social innovation by comparing the Great Bear Rainforest and Canadian Boreal Forest Agreements through the lens of institutional change?*

The Great Bear Rainforest Agreement has led to a transformation in formal policy and regulations in the form of new land designations and ecosystem-based, adaptive co-management, changes in informal rules and stakeholder relationships, new knowledge and practices guiding forestry, new cultural norms, and redistribution of power and resources. The Canadian Boreal Forest Agreement has so far not achieved formal rule changes, and the signatories have been investing significant time in implementing their informal rules and generating new knowledge, this hasn't led institutions governing the Boreal across Canada to adopt new practices or norms. The CBFA also did not include First Nations, and has not

advanced significant changes to the underlying power arrangements of various institutional and outside actors. Participating forest companies and ENGOs have focused their resource investments towards CBFA implementation away from business-as-usual or conflict, however all parties admit that progress and on-the-ground change has been extremely slow.

Implementation activities have been advanced for four years in the case of the Boreal, and thirteen years in the case of the GBRA. This alone can account for part of the difference in institutional impacts, in particular the lack of the CBFA's impact thus far on provincial policy and law. However, the potential of each Agreement to advance radical or system-wide impact also lies in their founding conditions and surrounding context, the strategies and influence of various actors, the scope of each undertaking and the over-arching normative framework and goals of each Agreement. These factors and conditions interacted in complex ways over time and led to differing impacts of the two Agreements. Actors employed phase-sensitive strategies and responded to emergent changes in context during the process that led to the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement. Below, the institutional change process is considered over the 4-phase lifecycle, from 1) institutional stability, to 2) institutional conflict, to 3) institutional innovation, to 4) institutional restabilization (Zeitsma and Lawrence, 2010).

The conditions and factors that affected outcomes in CBFA and GBRA held influence during particular phases of the change process. Initially, the phase of institutional stability was sustained by the legitimacy of the dominant frame. As the forest regimes moved in to a phase of conflict, the possibility for systemic change was influenced by a) *the degree of conflict and media visibility* that surrounded the issue, and the b) *the power of the actors in conflict* to bring about new institutional arrangements. These first two factors continued to influence the scope of innovation possible and the likelihood of implementation in later phases of institutional change. As the process moved into a phase of institutional innovation, c) *the values*

underpinning the new field frame and its breadth or inclusiveness affected the potential impact of each Agreement. Also during this phase, d) *the scope and complexity* of the undertaking was important, in particular how it related to existing formal institutions. During the phase of institutional restabilization when implementation of the new frame occurred, critical factors that either enabled or acted as obstacles to systemic change were e) *the readiness of political vehicles for implementation*, f) *the resources mobilized for implementation*; and the g) *the long-term involvement of senior actors*. The relationship between phases of institutional change and the factors influencing systemic impact of the Agreements is shown in Figure 14, and each of the seven factors is discussed below.

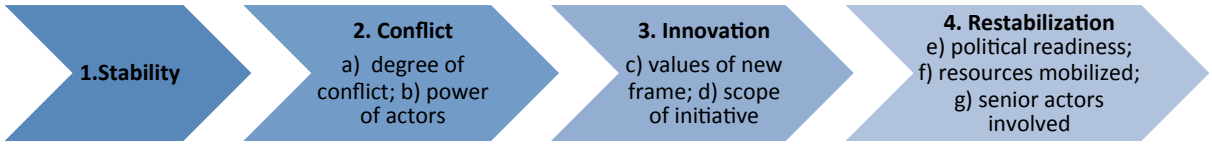

Figure 15. Factors Affecting Systemic Impact Over the Four Phases of Institutional Change

Degree of Conflict and Media Visibility

First, the *degree of conflict and media visibility* from the marketplace threat and public campaigns was significantly lower over the Boreal than during the GBR campaigns, which meant the forest industry retained more legitimacy and negotiating power in the conflict over the Boreal. The marketplace conflict over Canadian wood and contract cancellations to companies operating in the Boreal were sufficient to shift the industry into a phase of conflict, however this was not as intense or societally relevant as the conflict in British Columbia over coastal rainforests, which began with Clayoquot Sound in 1993, and therefore had time to destabilize the forest regime more deeply. The longer history and higher degree of conflict and material threat from the GBR campaigns led to a comprehensive or system-wide breakdown in the legitimacy of the incumbent forestry regime in the province of BC. The opposition of increasingly influential First Nations to logging in the Great Bear Rainforest added to this

breakdown in legitimacy, in particular because of new legal precedents requiring the province to consult and accommodate Aboriginal Rights and Title in their resource development plans. These conflicts and challenges created an opening for a more radical institutional reframing in the period of innovation, and political impetus for implementation during the phase of restabilization.

ENGOs had less leverage to push for radical change during the CBFA negotiations, due to lower intensity of public conflict and media attention surrounding Boreal campaigns and caribou conservation. Company leaders engaging in the Boreal brought some experience dealing with environmentalists, and a desire to be proactive in response to looming caribou recovery requirements rather than letting the conflict "spiral out of control". The industry was aiming for a better deal through pan-Boreal negotiations with ENGOs than what they might get from provincial governments. Because the Boreal conflict was primarily aimed at the marketplace, there was not an urgent perception by provincial governments that they had to act to resolve a situation of intractable social conflict, weakening the longer-term possibility of implementing fundamental changes to forestry rules. Once the cease-fire was achieved and campaigns stopped, ENGOs lost leverage, and had to support signatory companies in their marketplace communications. Yet, little progress occurred in the ensuing years, which led key markets groups to withdraw from the CBFA, further eroding the power of environmentalists to pressure for new rules. In contrast, due in part to the protracted and public conflict over the GBR, ENGOs were better able to sustain the threat of marketplace reprisals and political consequences if high levels of protection and ecosystem-based management practices were not implemented as part of the Agreement.

Power of Actors in Conflict

A second factor affecting the impacts of each Agreement was the *power of the actors in conflict*, which had to do with external political, legal and economic factors, and internal factors

including the cohesion of each side, and the availability of resources. FPAC and the Canadian industry engaged in negotiations with ENGOs earlier and from a stronger negotiating position, due to their sustained legitimacy in the public eye, the economic importance of the Boreal, and the economic downturn. These factors enabled them to push for an Agreement that emphasized industry prosperity needs. Those who might favor the status quo also benefit from the jurisdictional complexity of forest governance in the Boreal, meaning that regime incumbents need do very little to resist institutional change (Lawrence, 2008). The lack of involvement of First Nations in the CBFA also meant that the perspectives and concerns of Aboriginal people were not included in the Agreement, and it was subject to much more criticism after signing. During CBFA implementation, the ENGO caucus also faced both internal conflicts and lack of resources, leading to the eventual departure of markets groups Greenpeace and Canopy, and making it harder to hold the industry accountable to delivering transformative outcomes. In contrast, the GBR ENGO alliance was cohesive and well funded. Their position was also buttressed by the additive voices of First Nations, who brought constitutional power to their advocacy for radical change to the forest regime in the Great Bear Rainforest, and eventually held the power through government-to-government negotiations to determine the final make-up of the Agreement.

Values and Breadth of New Frame

The third factor influencing institutional impact emerged during the innovation phase, and concerns the underlying *values and breadth of the new frame* proposed. This relates to the new paradigm and norms that are underpinning the Agreements, as well as the perspectives included and the new knowledge guiding adoption of policy and practice. The replacement paradigm guiding the GBRA represents a radical and comprehensive departure from the dominant industrial sustained yield paradigm, toward strongly linked social, cultural and ecological goals under EBM and adaptive co-management. First Nations co-management, and conservation-based economic development goals are radical components of the new frame in

the GBRA that address social justice and community development and replace the dominant extractive economic frame, yet they are absent from the CBFA. The new field frame advanced under the CBFA implies incremental change to both practices and the industrial forest paradigm. There are several reasons for this difference in field frames. Because First Nations and other forest-dependent communities were not included in CBFA negotiations the goal of industry's interest in sustaining the current economic model was not challenged by alternative approaches that emphasizing community economic development, First Nations use of the land and resources, intergenerational equity or human well-being. In hindsight, the decision of the negotiating parties to exclude First Nations from the CBFA likely had significant influence on the degree of transformative change that was possible to achieve through the Agreement. In comparison, the GBRA's inclusion of social, ecological, economic *and* cultural perspectives disrupted the dominant economic discourse about necessary "trade-offs" between ecosystem health and economic progress, replacing it with the assertion that healthy people, communities and regional economies depend upon healthy ecosystems. Finally, due to the powerful legal status of First Nations in BC, and the effectiveness of the Coastal First Nations alliance, new governance forms enshrined community economic development opportunities and the values of a conservation-based economy.

The science of ecosystem-based management was central to this radical change in the field frame guiding forest regimes in the Great Bear Rainforest. EBM requirements for managing to "low risk" required that spatial and temporal characteristics of ecological processes be retained over the landscape level, which translated into large protection requirements in operational forest areas in addition to legally-designated protected areas. The adoption of FSC-certification in the GBR further influenced stand-level forest practices. In contrast, the EBM language in the CBFA was narrower, describing silvicultural best practices only at the stand-level (CBFA, 2010), without the requirement of FSC certification. The CBFA may result in changes to clearcutting practices in individual stands, but the overall goals do not require "low risk"

management so that ecological processes be maintained over evolutionary timescales or historical spatial patterns - in short, it will not result in as much ecosystem protection being deemed necessary by the science. The CBFA is also informed by the federal government's caribou science, which is not based on more ecologically comprehensive conservation-biology principles for species maintenance. Due to the CBFA's narrower adoption of ecosystem management principles and the lack of significant challenge to the industrial forest extraction paradigm by either EBM or socio-cultural requirements, there is less potential for radical change to the dominant industry field frame, even if the CBFA gets fully implemented. Interview data suggests the new field frame under the CBFA was bounded by the skillful negotiation of industry representatives, who drew on their previous experiences from the Great Bear Rainforest to limit some of the more radical ecological implications of EBM.

Scope and Complexity of Initiative

In one respect, however, the CBFA is more radical than the Great Bear Rainforest, as it attempts to create a new level of governance along an ecological, not a political, boundary. The fourth major difference between the GBRA and the CBFA is in the *scope and complexity of the initiative*. The CBFA is focused on an ecosystem that spans seven jurisdictions, and 76 million hectares of land - 29 million hectares of which have been in temporary harvest deferral. In contrast, the GBRA had a smaller scope at seven million hectares, within a single provincial jurisdiction, where regional land use processes were already underway. It was this added scope and complexity that led the forest companies and environmentalists negotiating the CBFA to plan to engage First Nations after an initial framework and goals were reached between themselves. The complexity of differing First Nations legal status across Canada, and the lack of a legitimate body representing diverse Nations presented enormous obstacles to their inclusion in a timely and coherent way in a pan-Canadian conversation about forestry in the Boreal.

Implementation of both Agreements is technical, complex and detailed, requiring the work of dozens of people over many years. However, an added challenge for CBFA signatories is that implementation work has to take place in the absence of over-arching institutions with the jurisdiction to govern forest management. The Great Bear Rainforest Agreement covered two pre-existing planning regions of British Columbia, where legal and regulatory frameworks existed to administer it in a comprehensive manner. In contrast, because land and resource management occurs at the provincial level, there are no national forest governance structures. CBFA signatories' time has been consumed developing informal governance processes, sharing knowledge, building trust and cultures of collaboration in different regions, and finding the resources to do so. Yet, implementation of the Agreement goals depends upon adoption by each individual provincial jurisdiction. While new Federal endangered species laws provided a political opportunity to integrate woodland caribou recovery across provinces, the more comprehensive planning approach advocated by CBFA signatories remains subject to the existing patchwork of provincial laws, and the different policy windows and regulatory vehicles each province. The jurisdictional complexity of the Boreal may have precluded pursuit of the kind of values-complexity advanced under the GBRA to address linked social ecological and cultural goals.

Readiness of Political Vehicles for Implementation

The fifth, related, difference in the context of the Agreements affects the transition from the phase of institutional innovation to restabilization, and influences the likelihood of successful implementation. This condition is the *readiness of political vehicles for implementation*. Implementation mechanisms for the GBRA were directly tied to existing policy vehicles via the ongoing Land and Resource Management Plans, and government had clear timelines for completion. Further, due to the high level of social conflict and media attention, it was a political necessity for whichever government was in power in British Columbia to announce a formal solution to the conflict. Under the CBFA, signatories have had to navigate differing

political and legislative opportunities in each province, along with the diverse priorities of various electorates and stakeholders. This sets up countless opportunities for the original intent of the CBFA to be drawn back towards the dominant field frame, and presents a large political challenge to ENGOs especially to create the perception in each province that more radical changes are warranted.

Resources Mobilized for Implementation

A sixth factor that influenced the difference in outcomes between the CBFA and GBRA processes was the *resources available to invest in implementation* activities. An important component of the overall political package in the Great Bear Rainforest Agreement was the provision of conservation financing which helped to gain the support of powerful First Nations, who together with the provincial government had final sign-off on the GBRA. Funding was contingent on First Nations committing to larger portions of conservation in their traditional territories, which encouraged adoption and implementation of more radical conservation goals. No similar funding arrangements were developed under the CBFA. Ongoing funding for the GBR campaign from US foundations also ensured that Greenpeace, ForestEthics, and the Sierra Club of BC could deploy sufficient resources over a decade-long implementation period through investments in staffing and long-term strategic and technical capacities. This long-term funding enabled ENGOs to sustain marketplace scrutiny and ensure that EBM was defined and implemented to maximize conservation gains. In the Boreal ENGO caucus, markets groups in particular found it difficult to sustain sufficient funding once the CBFA was signed, due in part to the internal strategic disagreements in the caucus, and because the region had less recognition and charismatic appeal. Related to this, environmental groups were largely unable to attract funding for the CBFA from large private Silicone Valley-based foundations such as Packard, Moore, and Hewlett Foundations that had invested in ENGOs work the Great Bear Rainforest and provided seed capital for the $120 million conservation fund. The two environmental foundations involved in the CBFA could not

generate or sustain the same scope of funding. In the absence of sufficient private philanthropic funds, the CBFA Secretariat secured $2 million from the federal government to support implementation, which may further neutralize the potential for disruptive change under the CBFA.

Long-term Involvement of Senior Actors

The final condition affecting the differing institutional impacts of the GBRA and CBFA is the *long-term presence of senior actors*. Several of the key ENGO, First Nations, and company leaders responsible for GBRA implementation have been with the process for almost twenty years or more, as their involvement dates back to coastal conflicts in BC in the early 1990s. These leaders have stewarded the original spirit and intent of the Great Bear Rainforest Agreement, applying deep experience, knowledge, and strategic relationships to ensure rigorous implementation. In contrast, the lead negotiators of the CBFA for industry and the ENGO caucus, who are both credited with sustaining bold visions and keeping their respective caucuses together, left their organizations - the ENGO lead before the official announcement of the CBFA, and the president of FPAC about a year later. In addition, the two senior executives who brought experience from BC's forest conflicts and played important leadership roles negotiating the CBFA both retired within a year of the Agreement's signing. There has also been significant turnover in the leadership of the CBFA Secretariat, although the acting director as of 2013 has worked on the Agreement from its inception. While it is difficult to assess the impact an *absence* of continuity of senior leadership has on CBFA implementation, it is evident the *presence* of these leaders in the GBRA have sustained the political will, resources, and original intent of the Agreement on the long road to implementation.

In summary, seven factors were identified that influenced the potential for the dominant institutional regime to be transformed in a way that led to discontinuous and systemic change,

coinciding with different phases of change. Initially, the phase of institutional stability was sustained by the legitimacy of the dominant frame. How significantly the dominant frame was undermined during the subsequent phase of institutional conflict had to do with *the degree of conflict and media visibility* that surrounded the issue, and *the power of the actors in conflict* to challenge the dominant institutions and bring about new institutional arrangements. The dominant institutional arrangement was much more significantly challenged in the Great Bear Rainforest than the Boreal, and the relatively lower degree of political conflict and lack of diverse powerful actors in the CBFA meant there was less likelihood for profound systemic change. As the process moved into a phase of institutional innovation, *the values and breadth of the new field frame* had a central influence on how far-reaching the impact of each Agreement could be. Again, the scope of the new field frame in the Great Bear Rainforest was comprehensive - advancing economic visions of community economic development for First Nations linked to ecosystem-based and adaptive co-management. In contrast, the Canadian Boreal Forest Agreement sought only to maximize ecological health and industry prosperity. This was partially influenced by the desire of the forest industry avoid the radical operational impacts that the full adoption of EBM had on company profits in the Great Bear Rainforest. Also during this phase *the scope and complexity* of the undertaking was important. Progress on the CBFA goals has been very slow due to the complexity of implementation when no pan-Boreal governance institutions existed previously. This was compounded by the lack of *ready political vehicles for implementation*, and as of 2014, no protected areas or new legislation have been implemented under the CBFA. The Great Bear Rainforest Agreement was directly tied to legislation through two imminent land use plans. ENGOs in British Columbia were also highly successful in *mobilizing resources for implementation* of the GBRA, unlike in the case of the CBFA. And, finally, many *senior actors* in the Great Bear Rainforest have seen the Agreement through for almost 20 years from conflict to implementation, which has helped sustain and advance its original system-changing spirit and intent.

Conclusion

As people marshal deliberate multi-sector efforts to address complex social-ecological challenges it is critical to gain deeper insight into the processes and strategies that lead to systemic change. It is equally important to evaluate the outcomes from deliberate systemic change efforts, and new methods are needed for this (Mulgan et al., 2007; OECD, 2010). Social innovation involves profound changes to the beliefs, resource and authority flows, rules and practices of social systems (Westley & Antadze, 2010). This emphasis on the more transformative aspect of social innovation involves macro-social changes, in other words, institutional change. This chapter presented a framework for evaluating different dimensions of systemic impact using conceptual resources from institutional change theory (Hargreaves &Van de Ven, 2008; Zeitsma and Lawrence, 2010). The framework was applied in order to compare two cases of institutional innovation - the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreements, which occurred in the context of ENGOs' marketplace campaigns and the rise forest certification in supply chains. Through this comparison it became evident that the Great Bear Rainforest has resulted in more significant institutional or systemic change, and the reasons for this were identified. The framework provided original insight into the institutional outcomes from the two cases, as well as highlighting important aspects of the process and the strategies at different phases of innovation that influenced how profound the systemic impact of each Agreement was. I conclude here by identifying ways to develop this evaluation framework further. Following that, I summarize some of the implications of this research for the theory and practice of systemic change and social innovation, and suggest directions for further research.

Evaluating Social Innovation

New approaches are necessary to evaluate social innovation - especially ones that take a complex and process-oriented perspective (Patton, 2011; Westley and Antadze, 2014), and the framework introduced here suggests five dimensions through which systemic or institutional

innovation can be analyzed and compared over distinct points in the life of an initiative. The findings show that the Great Bear Rainforest Agreement has resulted in greater institutional innovation than the CBFA - that greater discontinuous novelty has been adopted into formal institutional rules, informal governance processes have changed significantly, cultural norms and the overall organizational field frame has changed from an industrial-extractive paradigm to an ecosystem-based, adaptively co-managed paradigm, and that power and resources have been redistributed. The impacts of macro-social change efforts can be identified and compared using these five dimensions. This research suggests new insights about the process of change can be gained through comparison of impacts across these dimensions, although further cases are needed to make the framework more robust, and to define ways to measure these dimensions effectively over time.

The evaluation framework could be improved through the use of additional methods. Measuring the different dimensions of institutional change points to the need for a diversity of methods and epistemologies, which can prove difficult to bridge. It is relatively easy to collect empirical data on formal policy and ecological outcomes, and specify what has been implemented. To clearly identify changing informal governance and rules as well as perceptions of the overall benefits of such Agreements requires qualitative approaches. Changes to culture and norms have been successfully evaluated through narrative-focused discourse analysis (e.g. Maguire and Hardy, 2009), and these methods could be brought into the evaluation of social innovation. Practice theory (Shove and Walker, 2006), could be applied to understand how new practices and routines are stabilized. Instituitonal theory that unpacks issues of power and legitimacy (e.g. Deephouse and Suchman, 2008; Gray et al., 2015; Lawrence, 2008) could add further nuance to understand the role of power in achieving institutional change outcomes. Critical social theories could also further illuminate issues surrounding power inequities and redistribution. Another area of impact that current approaches to social innovation emphasize is increased social participation or inclusion

(HUBERT, 2010; Haxeltine et al., 2013; Westley and Antadze, 2010). Further development of evaluation criteria could therefore also include measurement of social participation or social capital (Putnam, 1995). For activists, philanthropists and evaluators, these dimensions for evaluating systemic change may be useful measures as a counter to the dominant, positivistic logic models commonly applied to evaluate the effectiveness of social innovation or change work (Haskill and Beer, 2012). Furthermore, the findings about how different strategies at different phases of change can influence systemic impact could provide important insights to inform change-making efforts.

Developing the Theory and Practice of Systemic Change

The framework presented here for evaluating institutional or systemic change outcomes specifies some of the many facets that could characterize the impacts of successful social innovations, without reducing evaluation of interventions to a logic model and thereby losing their complexity (Patton, 2011). The research also identified seven factors that influenced how much system-wide impact was possible in each case, at different phases of the institutional change process. By comparing the processes of the two Agreements, key differences were evident in the dynamics involved in the process that help explain the disparity of outcomes from incremental to more radical change. Despite this being a critical area for knowledge development and practical application, there is little emphasis in social innovation or institutional change literature on evaluating or comparing system-wide impacts that have resulted from processes of institutional change (e.g. Hardy and Maguire, 2009; Hargrave and Van de Ven, 2009; Zietsma and Lawrence, 2010). Seven factors were identified that varied between the GBRA and the CBFA and influenced their systemic impacts. Looking at the cases as a whole, several other patterns of interest also emerge. The implications of some of these factors and patterns are discussed further below, along with suggestions for further research.

One finding of note is how the breadth of the new field frame or paradigm influences the possible scope of change. In each Agreement process there were two distinct paradigms competing at the level of organizational field - the dominant industrial forest model of sustained yield management (Pederson, 2003), and the emerging paradigm of adaptive, ecosystem-based management (Bourgeois, 2008). The two cases reveal that there is a spectrum of institutional change possible, ranging from a more radical adoption of new scientific perspectives and views on the multiple socio-cultural values of healthy ecosystems, to more incremental institutional truces, where best practices may be more slowly adopted and adapted to into a largely unchanged institutional field that reproduces dominant economic and industry assumptions. This is clearly related to the power of outside actors in being able to undermine the legitimacy of the dominant frame, and the ability of incumbents to defend it. This was also related to the degree of conflict involved in creating the institutional opening, the quality of knowledge and science brought to bear on the problem, the inclusion of other actors with perspectives capable of challenging the dominant economic assumptions, and having policy vehicles ready to enshrine radical policy decisions quickly. These factors suggest a pattern of relationship between the differential power of actors, the role of conflict in revoking legitimacy and advancing new knowledge, and political readiness that deserves further exploration for researchers interested in systemic change.

This research also provides new insight into the relationship between conflict and systems-change, where conflict and financial threats acted both as a catalyst to disrupt locked-in institutions and as an ongoing form of power to influence how radical the new field frame would be. The comparatively radical outcomes from the Great Bear Rainforest were enabled through ongoing marketplace scrutiny, resource allocation in the form of conservation financing, and strong First Nations support which together sustained pressure to implement more radical change in policy and governance structures. Researchers interested in systemic change may want to further explore the relationship between cross-sector conflicts in the

media and marketplace and systems-change - to assess under what conditions conflict can be generative and when it stifles innovation. Based on the findings here, conflict can open up locked-in institutions through novel channels, yet it must be wielded skillfully as a strategy that can adapt and change, not as an entrenched position, and come from multiple sources in order to result in significant institutional change. Likewise, the jurisdictional fragmentation and sheer scope and scale of the changes sought by ENGO actors may have unwittingly enabled strategies of institutional resistance (Lawrence, 2008) from forest industry actors. Gray et al. (2015) provide concepts which may be helpful in understanding the disparity of outcomes between the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement, highlighting how the lack of strong external pressure to reframe, and the timing of political processes is not lining up, and the large number of forest companies involved in the CBFA would enable industry actors to engage in both "institutional distancing" or "frame merging" strategies to insulate themselves from the more radical demands for change (Gray et al., 2015).

More radical or systemic change was also possible in the case of the Great Bear Rainforest due to phase-sensitive strategies (Westley and Antadze, 2010; Zeitsma and Lawrence, 2010). Initially, ENGOs cultivated conflict that led to the loss of legitimacy of the dominant frame, and they built partnerships with First Nations to generate multiple forms of power to leverage change through legal means and marketplace pressure. These forces of conflict influenced the development of new knowledge representing profoundly different values and economic assumptions. During the phase of institutional restabilization, it was critical to mobilize new resources and capitalize on the political opportunities available to legislate rule changes. The ongoing involvement of senior actors was also found to be important at this phase - both in navigating the politically sensitive processes of implementing change and because of their ability to hold to the original spirit and intent of the Agreement. While the first three factors have been explored in the literature, the role of senior actors in implementing radical change

agendas warrants further research.

Studies of social innovation often focus on a national or regional scale. In the cases of the GBRA and CBFA, disruption of larger institutional contexts through markets campaigns illustrates not only systemic, but cross-scale innovation that had impacts on existing patterns of production, consumption and distribution (Caulier-Grice et al., 2012; Westley et al., 2014). The strategies of environmentalists and concerned stakeholders have influenced change in forest regimes at the regional and national levels in Canada, and over the course of 20 years have impacted the global governance of forests, harnessing about 10% of the supply chain as certified products (FPAC, 2009). While this research looks at only two Agreements, they are notable examples of the distributed, global strategies civil society actors have employed to shift the dominant institutional context. Furthermore, Westley et al. (2014) describe how long-term social innovation programs or initiatives build a platform of experience, in-depth knowledge of the field, relationships and reputation, which can be built upon to enable broader systemic change. Meadowcroft (2012) observes that the transition to sustainability may take decades, with repeated cycles of interaction, where actors on all sides draw lessons from previous rounds. Further development of theories of systemic social innovation could build on complexity-based approaches that emphasize cross-scale interactions (Haxeltine et al., 2013; Moore and Westley, 2009; Westley et al., 2014) and emphasis on longer-term cases, where cycles of learning and broad spatial-temporal interactions can be analyzed, and further insights gained into the iterative and distributed processes of social innovation over time and space.

Related to issues of scale, the CBFA example suggests that it innovation efforts may stall where there is simply too much jurisdictional complexity and too great a geographic scope. CBFA signatories have faced significant challenges in advancing systemic change related to this scope, resource scarcity, and the need to align legislation in multiple jurisdictions and

enable broad collaboration at a level where no governance institutions exist. The CBFA case will continue to have valuable lessons as example of a scaling effort with potentially insurmountable complexity for implementation, and should continue to be studied over time, in conjunction with other such sweeping multi-jurisdictional change efforts - in particular other cases that were driven by non-government actors. In some cases there may be aims that are simply too complex to be achieved, and that it is important to understand the trade-offs involved when pursuing highly complex efforts. Here, power and the institutional embeddedness of actors also play an important role. Institutionally embedded actors are necessary targets of influence strategies, and complex overlapping organizational fields can become seedbeds of potential resistance strategies where individuals and organizations can push back or deflect change efforts (Lawrence, 2008). Finally, while much attention is paid to entrepreneurial efforts of non-profits, business, philanthropists and other civil society actors in advancing social innovation, there are fewer cases where business and activists engaging on a global stage pre-emptively agree on new policy directions and seek to gain their implementation in partnership. More attention to this approach to institutional change is clearly warranted, and relevant questions are: Where else has this worked? Can it work in on social issues as well as environmental ones? What are some of the potential drawbacks of this approach, and does it undermine democratic institutions?

The lessons from these Agreements and the global campaigns that catalyzed them may be particularly relevant to the networks of civil society actors and their allies across sectors who are working to address the global climate crisis. The transition to energy sustainability and de-carbonized economies requires regional, national, and global policy change, and will impact virtually every global company and supply chain. Insights from the Great Bear Rainforest Agreement suggest that more radical change can be accomplished when social, economic, and ecological transformations are sought simultaneously. This could challenge the approach of some change agents, who focus very narrowly on accomplishing particular social or ecological

aims, and instead suggests a positive relationship between system transformation and the inclusion of multiple perspectives and values. A further lesson for the climate movement includes the effectiveness of addressing global issues by utilizing the interests of global firms (through both threats and promises). As many ENGO leaders have discovered, engaging with global firms to shift supply chains can have significant, immediate and scalable ecological impacts, while also creating pressure to break policy lock-in.

These findings contribute to the growing body of work on institutional change and social innovation, and underscore the need to develop sharper concepts for evaluating the depth and comprehensiveness of change efforts, along with analysis of the factors and strategies and that can lead to system-wide impact. The 20-year interactions between FSC, global markets campaigns, and the CBFA and GBRA in Canada provide an example of how a global industry has innovated through deliberate, multi-sector strategies that cross political boundaries and span supply chains. While forest sector transition has involved conflict and institutional disruption, the scale of change in these cases matches the scale of the problem, providing an invaluable example of complex responses to intertwined social-ecological challenges.

Conclusion

The multi-faceted sustainability crisis poses challenges to virtually every aspect of contemporary social systems (Galaz et al., 2012; MEA, 2005) and impels people in many sectors to generate innovative responses. New integrative knowledge forms are necessary in order to address wicked, linked social-ecological problems (Funcowtz & Ravetz, 1993; Lawrence & Despres, 2004). In the face of growing needs for intentional and collaborative change, several parallel theoretical communities are studying complex co-emergent change processes - in particular investigating strategies pursued by different actors and the politics involved in changing institutional, economic and governance arrangements. Bodies of theory and practice surrounding social innovation (Mulgan et al., 2007; Westley et al. 2006), resilience (Gunderson & Holling, 2002), sociotechnical transitions (Geels, 2005; Kemp & Rotmans, 2004; Grin et al., 2010), and institutional theory (Powell and DiMaggio, 1995; Scott, 1995; Zeitsma and Lawrence, 2010) have different founding orientations yet have developed complementary frameworks for understanding complex change processes in social systems. Whether referring to it as systemic innovation (Mulgan & Leadbeater, 2012), sustainability transitions (Geels, 2010), transformation in linked social-ecological systems (Walker et al., 2006) or institutional innovation (Hargreaves & Van de Ven, 2006) they mean changes in social systems at the macro-institutional level that affect many parts of the system across different scales, and result in a change in the overall character or identity of the system. Each theoretical approach provides insight into relationships between resistant systems and change-seeking actors, and the multi-level interactions involved in the emergence of new systems arrangements.

While framed in slightly different terms, gaps in knowledge have been identified from each theoretical perspective about the need for more complex models of agency that go beyond heroic approaches to individual or organizational leadership (Westley et al., 2006) to illuminate multi-level strategies of actors (Grin, 2010) and their co-emergent relationship to

existing systems (Geels and Schot, 2007; Westley and Antadze, 2010). In particular there is a gap in understanding about the role outside actors or activists play in catalyzing institutional change (Lawrence and Suddaby, 2006; Maguire and Hardy, 2009; Smith et al., 2010). Therefore, the focus of this research has been to learn more about the forms of agency and cross-scale strategies pursued by outside actors to advance transformative or systemic change.

Some theoretical dialogue and interaction among these four approaches has occurred, however they have not previously been applied together to analyze change processes. By using a multi-paradigm approach to examine the agency involved in catalyzing innovation in Canadian forest regimes, I have generated new theoretical insights about how and when locked-in systems can be shifted and the strategies environmentalists used. This multi-paradigm analysis and the resulting model constitute a unique theoretical contribution. Chapter findings based on analysis through different theoretical lenses are integrated below into a more comprehensive model of cross-scale agency than each theory presents in isolation. Furthermore, the multi-paradigm analysis identifies limitations and contributions of existing approaches to the theory and practice of change-making in complex systems contexts and provides new insights to inform theory development in the four paradigms applied here. I begin by summarizing the research objectives and process. Next, I review the findings and integrate them into the theoretical framework from Chapter 2, providing a meta-paradigm model that synthesizes the multi-level patterns of change agency involved in systemic change, through four phases of innovation. Finally, I discuss the limitations of the research, summarize implications for theory and practice and suggest directions for future research.

Summary of Research Approach

The purpose of my research was to gain new understandings of the deliberate agency involved in transforming social systems, and to contribute multi-paradigm perspectives on systemic change to contribute to future work the fields of social innovation, resilience, socio-

technical transitions and institutional change theory. Specifically I wanted to understand more about the strategies of civil society actors in catalyzing change in locked-in systems, taking into account that such systemic change crosses boundaries of social systems and scales (Westley and Antadze, 2010). To investigate these questions, I compared two cases of multi-sector forest industry innovation that are complex, regional and global in character - the Great Bear Rainforest Agreement (GBRA) and the Canadian Boreal Forest Agreement (CBFA). I used a case study strategy (Yin, 2009) and modified grounded theory approach (Charmaz, 2006) to investigate the process surrounding each Agreement and develop a comprehensive narrative account (Abbot, 2001; Pettigrew, 1997). Using a multi-paradigm research approach (Lewis and Grimes, 1999), I developed more nuanced and rich insights from the case data than would have been possible through application of a single theoretical approach. Sequential, multi-paradigm research provided a more "kaleidoscopic" view of the innovation process and the agency involved in the two cases (Lewis and Grimes, 1999). This final synthesis is intended to generate new, meta-theoretical insights about cross-scale agency and the dynamics of deliberate systems change, and the phase-specific strategies that influenced how transformative the interventions were.

In this manuscript style dissertation, Chapters 4, 5, and 6 are stand-alone articles. However, they each also represent a different facet of the multi-paradigm research approach, and taken together provide empirical inputs for meta-paradigm theory building (Lewis and Grimes, 1999). I began in Chapter 1 by briefly introducing the problem, research questions, the multi-paradigm research approach. In Chapter 2, I reviewed the relevant literature from four theories - social innovation, resilience, socio-technical transitions and institutional theories. I then distilled four shared conceptual elements from the theories into a theoretical framework: 1) a defined focal system; 2) a multi-level structure of micro-meso-macro interactions; 3) cross-scale agency through personal, collective and proxy modes; and 4) a phased process of change.

Chapter 3 provided background on the Great Bear Rainforest and the Canadian Boreal Forest Agreements, and a twenty-year timeline of related events (Table 3, p.68.). The chapter reviewed literature on globalized environmental campaigns, the shift towards ecosystem-based management under the Great Bear Rainforest Agreement, and forest certification as a market transformation strategy. Next, using a sequential, multi-paradigm research approach (Lewis and Grimes, 1999), I applied selected theories as conceptual lenses to analyze the cases from different perspectives in Chapters 4, 5 and 6. In this extended conclusion I revisit my research findings and draw new conclusions about the agency and cross-scale processes involved in catalyzing systemic social innovation. Each chapter contains unique research findings about the processes of agency, scaling dynamics and conditions leading to innovations in the two forest regimes I studied. However, additional new knowledge is disclosed by analyzing the findings through the multi-paradigm theoretical framework developed in Chapter 2. This is synthesized into a model of cross-scale agency (Figure 17, p. 231).

Social Innovation Elements in the GBRA and CBFA

While the context and actors differed, six elements characterized the innovative model that emerged in Clayoquot Sound, was scaled to the Great Bear Rainforest and was applied again at a higher scale and level of jurisdictional complexity to Canada's Boreal Forest. The impact of a social innovation is related to the elements that make it up, and the distinct constellation of relationships between them (Westley and Antadze, 2010). The constellation of strategic elements in this social innovation includes 1) distributed regional and international markets forest campaigns generating conflict, leverage and demand; 2) negotiation of a "cease-fire" where logging in contentious areas and market campaigns are suspended; 3) creation of a "solutions space" for development of innovative solutions between ENGOs and industry; 4) establishment of a credible science panel to generate new knowledge and define ecologically and culturally sound practices (ecosystem-based management); 5) significant participation of

First Nations leading to co-management and power redistribution; and 6) gaining formal legislation of the negotiated outcome. While the last two elements have not been fully implemented through the CBFA, signatories are actively seeking First Nations participation and opportunities to advance the goals of the Agreement through provincial legislation. By pursuing this constellation of innovative elements, ENGO actors orchestrated reinforcing relationships across different spatial and institutional scales. These strategies generated new forms of market-based leverage, and led to disruption of the dominant forest products regime, which was translated into political opportunity by both forest industry executives and environmentalists, who entered into a process of innovation together.

Summary of Findings from each Chapter

As I describe in the multi-paradigm review (Chapter 1), each of Chapters 4-6 represented a unique application of theoretical lenses, guided by secondary research questions regarding the process and impacts of deliberate change agency. The interaction of these research paradigms and summarized findings are shown below (Figure 16). Chapter 4 investigated micro- and meso-level processes of agency during a phase of turbulent change, in the "safe solutions space" for negotiations between environmentalists, forest companies and other actors in the Great Bear Rainforest. Chapter 5 widened the subject of study to look at both the GBRA and CBFA through the multi-level perspective (Geels, 2005; Rip and Kemp, 1998), adding the conceptual lenses of distributed agency and mutual reinforcement dynamics from Grin et al. (2010) and collective and proxy agency from Bandura (2001; 2006). Finally, because investigation of systemic change requires understanding of both process and outcomes (HUBERT, 2010; Haxeltine et al., 2013), Chapter 6 developed an evaluation framework to gain insight into differing institutional impacts in the GBRA and CBFA cases. This chapter also identified seven conditions and factors over time that led to more or less radical system change outcomes. The findings are summarized in more detail below.

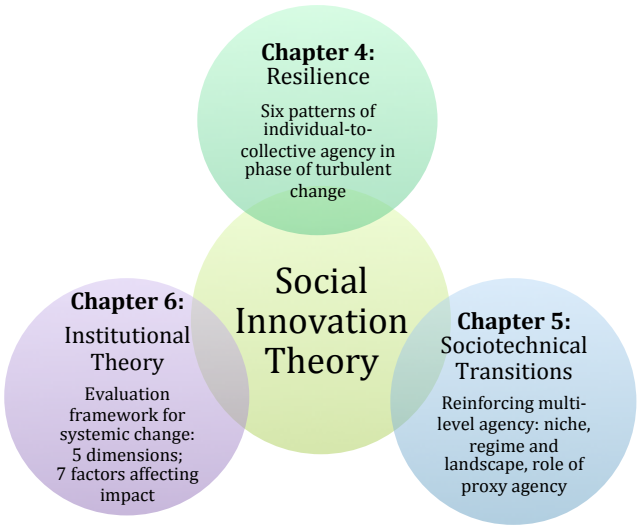

Figure 16. Multi-paradigm Research: Key findings in each chapter

Chapter 4, *Agency and Innovation in a Phase of Turbulent Change: Conservation in the Great Bear Rainforest* (Riddell et al., 2012), applied lenses from resilience, agency and social innovation theory to examine the individual and collective processes of agency involved in moving from the 'release' phase of conflict over the fate of the Great Bear Rainforest, into a phase of innovation/reorganization, where multiple sectors entered into a safe space for negotiations and redesigned the regional forest management regime. The premise from social innovation theory was that change is emergent, and that individual change can impact group dynamics, which in turn can change broader system dynamics (Westley et al., 2006). The research question was: *What are the individual and collective processes of agency that catalyze systems change?*

The paper defined social change agency as *intentional action to influence profound change in the basic routines, resource and authority flows, or beliefs of a social system*. The findings show that social change agency can be understood as a multi-level process of creating intentional change, where actors must attend to transformation at personal, interpersonal, and systemic levels in order to be successful. The research focus was on the negotiations process and surrounding context, which is at the niche level of a social system, as described in the Theoretical

Framework. Six generative and interwoven processes of individual and collective agency were identified as being critical to the transition from release to reorganization and innovation in the Great Bear Rainforest case:

1) creating powerful personal narratives;
2) humanizing opponents;
3) tolerating conflict and uncertainty;
4) focusing on solutions;
5) building an inclusive vision; and
6) understanding the dynamics and psychology of change.

The first three agency processes were enacted primarily at the micro- level (self-change), which enabled shifting perceptions of others and new relationships to be forged with former opponents. This evolved into three meso-level (group/relational change) processes where a broad vision for the region inspired a system-wide change coalition and led to a range of transformative outcomes. The six processes of agency demonstrated links between the micro processes of individuals, meso-level group interactions, and the macro-systemic context, showing that personal transformations gave rise to new relationships and laid the groundwork for system transformation. These findings suggest that processes of self-reflection and transformation may play a more important role in social change than previously thought. The patterns of agency identified here occurred largely at the niche level, and describe how personal and interpersonal agency processes impact the wider systemic or institutional level. Chapter 5 expanded on this, to look across three generalized levels in social systems: niche (micro-system level), regime (meso-system level) and landscape (macro-system level) to investigate distributed and proxy (socially mediated) forms of influence, and how these forms of agency interacted across levels.

Chapter 5, *Mutual Reinforcement Dynamics and Sustainability Transitions: Civil Society's Role in Influencing Canadian Forest Sector Transition* examined the agency of global civil society actors in encouraging sustainability transitions using the MLP from sociotechnical transitions

theory (Geels, 2005), analyzing the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement cases using concepts of mutual reinforcement dynamics (Grin, 2010) and collective and proxy agency (Bandura, 2001; 2006). The research questions were: *How did the strategies of transnational environmental actors encourage sustainability transitions in the cases of the GBR and CBFA? And, how does analysis of environmental actor strategies contribute to the understanding of agency and multi-level interactions in sustainability transitions theorizing?*

The main findings illustrate how distributed, multi-level and reinforcing local and global strategies of environmental actors changed financial incentive structures for forest companies. Environmentalists' mobilized collective and proxy agency through international market campaigns, which opened new venues to advance innovation in domestic forest regimes. Four key findings were:

1) Environmentalists deliberately generated reinforcing regime pressures that interacted between policy, markets and cultural domains to cause disruption;
2) Pressures on regime actors were generated through distributed "landscape leverage" strategies that used proxy agency to select, frame, amplify, mobilize and translate landscape pressures. Landscape leverage strategies led to a loss of cultural legitimacy and generated financial threats to the regime, and over time co-structured long-term marketplace trends in the form of consumer demand for green products;
3) Innovation niches were spatially distributed and largely non-technical, involving the creation of new markets and non-state governance vehicles for certified forest products (i.e. FSC) at the global level, and the creation of domestic policy-focused niches where firm actors proactively engaged with environmentalists in "safe spaces" to create and test innovations in sustainable forest management, and;
4) Mutually reinforcing dynamics were orchestrated across landscape, regime and niche levels over time by mobilizing the collective and proxy agency of other actors, resulting

in sustainability innovations being institutionalized through the Great Bear Rainforest Agreement and to a lesser extent through the Canadian Boreal Forest Agreement.

The case contributes theoretical insights into the forms of strategic agency expressed by a global coalition of Environmental Non-Governmental Organizations (ENGOs). This coalition of actors advanced 'constructive interference' and orchestrated mutual reinforcement dynamics across niche (micro), regime (meso), and landscape (macro) levels. Of particular importance is the role of socially mediated or proxy agency in generating landscape leverage. The case also suggests the landscape level may not be exogenous, and rather that it is both socially constructed and subject to the deliberate agency of actors. Both Chapter 5 and Chapter 4 were concerned with the agency and dynamics involved during the phase of turbulent change which spanned from the time of forest regime disruption through to innovation. Chapter 6 shifts from a focus on processes to a focus on outcomes, to compare the institutional or systemic impacts of the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement through phases of change from disruption, to innovation, to restabilization, and to study the factors that explain why the ecosystem-based management and conservation economy aspects of the GBRA have led to more comprehensive system-wide effects than those under the CBFA.

Chapter 6, *Evaluating Systemic Social Innovation: Comparing Institutional Impacts from the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement*, applies institutional and social innovation lenses to explore the research questions: *How can the systemic impacts of social innovation be evaluated? What insights are generated about the process and outcomes of social innovation by comparing the Great Bear Rainforest and Canadian Boreal Forest Agreements through the lens of institutional change?*

Building on the strand of systemic social innovation that emphasizes its impact on rules, resource flows, and beliefs of a social system, concepts from institutional change and

innovation theories (Hargreaves & Van de Ven, 2006; Zeitsma & Lawrence, 2010) were used to unpack social innovation as a process of institutional change. The institutional impacts of each Agreement were evaluated according to observed changes in five categories:

1) formal rules;
2) informal governance processes;
3) knowledge, practices and routines;
4) cultural norms and discourse; and
5) redistribution of power and resources.

Based on comparison across these five categories, the Great Bear Rainforest Agreement advanced more radical and discontinuous change than did the Canadian Boreal Forest Agreement. In addition, several factors during the process of institutional change were identified as influencing the potential for each Agreement to effect system-wide change, which were 1) the degree of conflict and media visibility; 2) the power of the actors in conflict; 3) the values and breadth of the new frame; 4) the scope and complexity of the initiative; 5) the readiness of political vehicles for implementation; 6) the resources mobilized for implementation; and 7) the long-term involvement of senior actors. Each of these factors was influential during specific phases of change. The research found that sustained conflict and the presence of multiple powerful actor groups was critical to create opportunity for change in locked-in institutions and ensure leverage for implementation. Furthermore, solving for multiple problems or perspectives enabled systems-change outcomes in the GBRA, however it is possible for the scope and complexity of an initiative to be too great, leading to time-consuming and resource-intensive implementation processes that may still fail to achieve transformative impact due to a lack of political readiness.

Synthesis - Patterns of Agency across Scales and Phases

The multi-paradigm review from Chapter 2 illuminated key lenses for understanding social change agency and cross-scale dynamics in the context of complex systems, which have been applied in each chapter to the Great Bear Rainforest Agreement (GBRA) and the

Canadian Boreal Forest Agreement (CBFA) cases. I now return to the theoretical framework in order to synthesize the findings above. My primary research questions were: *What new insights emerge from taking a multi-paradigm approach to analyze the Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreement? Specifically, what forms of agency and cross-scale strategies catalyzed change in unsustainable, locked-in institutions and advanced transformative change?* This section presents a model of four interacting patterns of agency involved in disrupting the dominant forest regime and advancing innovations, focusing primarily but not exclusively on the agency of environmental actors. I identified these patterns through a meta-paradigm synthesis (Lewis & Grimes, 1999), situating the findings from each chapter within the theoretical framework from Chapter 2. The four aspects from the theoretical framework are 1) defining the system of concern; 2) a multi-level structure showing cross-scale dynamics; 3) concepts for understanding agency and actor strategies; and 4) a phased change process. These elements are combined in process diagram below (Figure 17) and form the basis of discussion in this section.

By combining Westley and Antadze's definition of social innovation (2010) and Bandura's (2001) definition of agency as intentional action to influence one's functioning and life circumstances or environment, I defined social change agency as *intentional action to influence profound change in the basic routines, resource and authority flows, or beliefs of a social system* (Riddell et al., 2012). Four patterns of social change agency are illuminated through a meta-paradigm synthesis of the cross-scale processes agency in the Great Bear Rainforest and Canadian Boreal Forest cases. These are: 1) a *disruptive pattern of agency* that provides leverage or seizes opportunity to open up locked-in systems, enacted from outside the system; 2) a visionary-architectural pattern of *system redesign agency* that occurs between regime actors and outside actors in a negotiated safe space; 3) a relational pattern of *psycho-cultural change agency*, that occurs simultaneously between inside and outside actors to shift their relationships, and 4) the *mutually reinforcing pattern of distributed agency* that involves "inside-outside" strategies

that sustain leverage for change and connect solutions to political and wider institutional opportunities in order to gain their implementation through new law, policy, paradigms, practices and redistribution of power and resources.

Figure 17 shows a *Model of Cross-scale Agency Through Phases of System Innovation* that synthesizes findings using four key lenses distilled from the multi-paradigm review. This model maps the four patterns of agency discovered through this research onto a multi-level (micro, meso, macro) structure based on Geels (2005), to show cross-scale dynamics through a phased process of system innovation. The top arrow shows four phases of system innovation over time, based on a synthesis of phases from resilience's adaptive cycle (Gunderson and Holling, 2002), phases of social innovation (Westley and Antadze, 2010), and the phases of institutional change (Zeitsma and Lawrence, 2010), as described in the theoretical framework, Chapter 2. The phases move from system stability (conservation), to system conflict or disruption (release), to system innovation (reorganization) and finally to system restabilization (exploitation). The different patterns of agency are numbered 1-4, and operate over time and across levels. Each pattern is expressed through a particular blend of Bandura's (2006) three modes of agency: individual or *personal agency* where people influence their own functioning and environment, *collective agency* which is the interdependent efforts of people who pool skills, knowledge and resources to shape their future, and finally, *proxy agency* where actors do not have direct control, but influence others who possess knowledge, resources or means to act on their behalf.

In pattern one, *disruptive agency*, outside actors challenged dominant institutional arrangements by mobilizing collective and proxy agency, shown by the "ongoing landscape leverage" arrows, moving between macro and meso levels. Disruptive agency was generated initially by outside actors who enlisted the proxy agency of marketplace actors and directed it towards incumbent regime actors. Landscape leverage created reinforcing regime pressures in

cultural, market and political domains, disrupting the regime boundary by undermining its legitimacy, financial stability, and political support - shown in Figure 17 by the regime boundary moving from a solid to a dotted line. In these cases, forest company representatives, rather than policy actors, experienced sufficient disruption to enter into a solutions space with outside ENGO actors, moving out of the phase of systems conflict into an innovation phase.

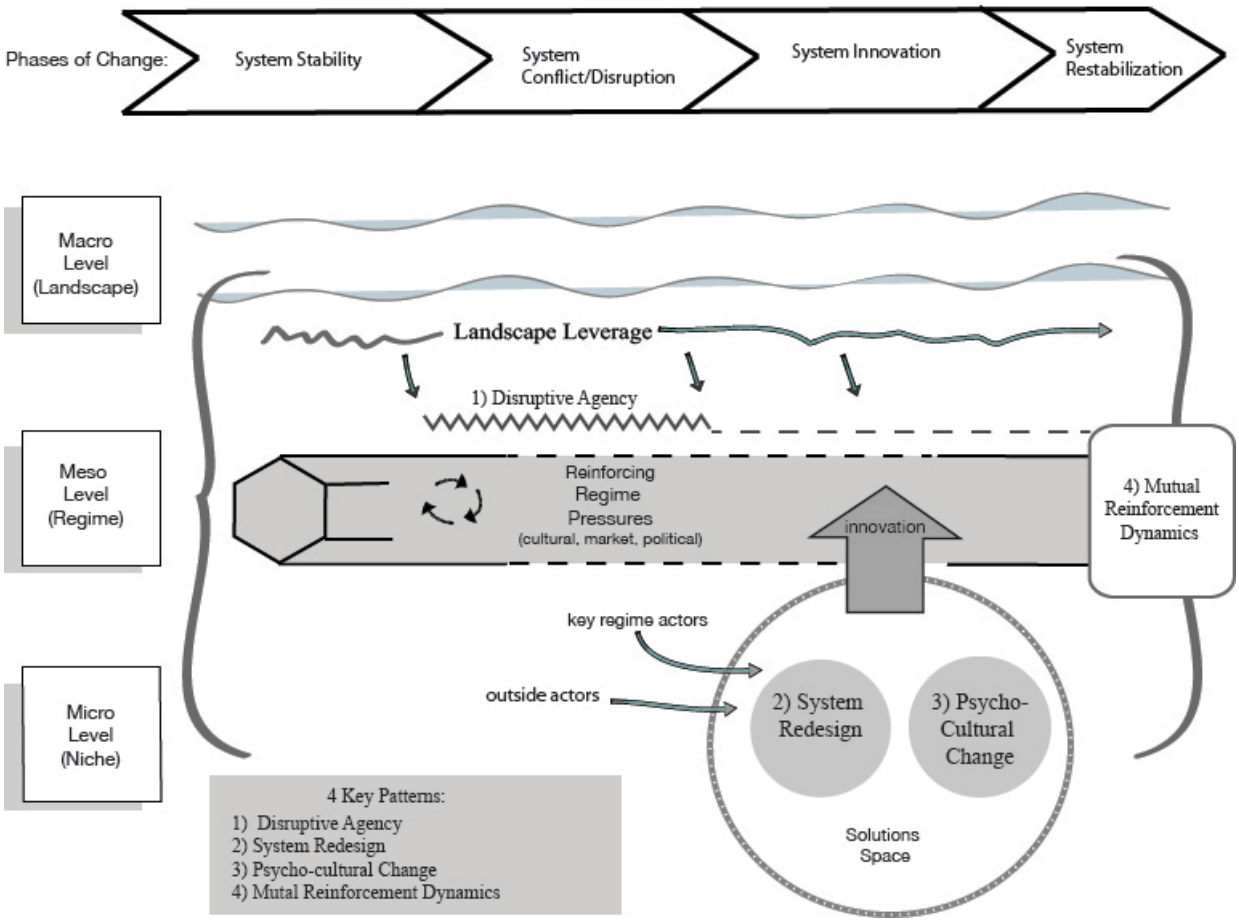

Figure 17. Model of Cross-scale Agency Through Phases of System Innovation.

During the system innovation phase, outside actors and regime actors entered a "solutions space" at the micro or niche level. Two patterns of agency are associated with the innovation phase: *system redesign* and *psycho-cultural change*, which interacted and were both necessary to the change process. Both patterns are generative rather than disruptive (although they included inter-personal conflict), and moved from individual to collective expressions as they

interacted. Before and during negotiations in the "solutions space" disruptive dynamics were generated and sustained by outside actors, shown by the dotted lines during the phases of system disruption and innovation at the meso and micro levels. When innovations were sufficiently developed in the solutions space, regime actors in the forest industry and government worked with newly legitimized outside actors to broker implementation of new institutional arrangements, shown by the arrow moving from the solutions space into the regime. This initiated a shift from institutional innovation to restabilization. Throughout the phases from conflict through innovation to restabilization, outside actors were mobilizing the fourth pattern: *mutually reinforcing agency*. This fourth pattern involved individual, collective and proxy modes of agency and connects the previous three patterns together over space and time. Each pattern of agency is discussed in greater detail below.

Disruptive Agency: Leverage from Outside Strategies and Proxy Agents

The first pattern of agency is disruptive, described in detail in Chapter 5 as the landscape leverage whereby environmentalists translated reinforcing pressures onto regime actors in order to disrupt the dominant cultural narrative, economic arrangements and political institutions, and to create demand for alternatives. Activists worked together (collective agency) targeting globally dispersed market and political actors – a form of proxy agency, which then harnessed a subset of aligned marketplace actors to accomplish their desired environmental outcomes. Disruptive agency attacked the boundaries of the regime by generating contract cancellations and public controversy, shifting it from a phase of stability to a phase of conflict. Actors aimed to delegitimize the regime by challenging the dominant norms, rules, knowledge and practices associated with industrial forestry, creating leverage to generate openings for institutional change across levels. During the phase of conflict when ENGOs were focused on disruption, regime actors expressed their collective agency by resisting attempts to change and defending the practices and boundaries of the regime (Lawrence, 2008; Zeitsma & Lawrence, 2010).

While environmentalists' disruptive agency at some points consisted of collective direct action tactics such as shutting down manufacturing sites or blockading roads, in these two cases the most powerful agency was socially mediated by ENGOs, who targeted and recruited specific proxy agents to frame a connected story and wield power far in excess of the collective agency of the environmental actors and organizations involved. Regime disruption depended on the proxy influence of distributed networks – concerned consumers, retailers, grassroots activists, shareholders, celebrities, media, and eventually large corporate purchasers of wood and paper products such as Home Depot, Ikea, Staples, Victoria's Secret and Kleenex.

Regime de-legitimization efforts focused on forest policies and practices in Canada andthe marketplace for non-certified wood products. Campaigns shamed 'bad actors' and framed a new narrative about responsible forestry, the conservation of globally significant ecological regions, and the important role consumers and purchasers could play. As discussed in Chapter 5, environmentalists' market campaigns also 'selected' and 'amplified' a progressive green subset of values among consumers and wood and paper purchasers, using sexy and humorous images, celebrities and controversial campaign tactics. In this way, economic threats and consumer concern were mobilized by ENGOs who were outsiders to the regime, but pressure was expressed through the proxy agency of actors with greater influence than environmentalists (i.e. more highly embedded institutional actors (Battilana, 2006; Garud, Hardy and Maguire, 2007; Green, Li and Nohria, 2009). ENGO campaigns distilled and directed the proxy agency of this wide network of actors, which threatened material damage, loss of social license or legitimacy, and voter opposition. This increased both the political salience and financial influence of campaigns onto regulators and forest company executives.

This expression of proxy agency differed from collective agency because it was not a collective shift of a *majority* of consumer, shareholders or large customer behaviour to which

decision-makers of firms had to respond, but instead, it relied on amplifying the conflict experienced by company executives and political actors through skillful use of media, big brand customers to disproportionately empower the story of changing marketplace preferences. Proxy-driven strategies therefore rely more on socially mediated perception than on substantial economic or values shifts - sometimes referred to as "smoke and mirrors" tactics by environmentalists. In a marketplace increasingly dominated by brands worth millions or even billions of dollars, social perception of legitimacy or "social license" is increasingly material to businesses, conferring greater influence on outside actors who can affect this license by catalyzing social debate and shifting the discourse and norms surrounding legitimate forestry activities. In a sense, brand value depends on dispersed and largely unconscious proxy support gained through marketing activities, and when this is challenged by ethical campaigns, brands have incentive to act to prevent devaluation or hijacking. Environmentalists refer to this strategy as "brand jujitsu" for the manner in which campaigns use the force of the 'opponent' against themselves. While this may seem manipulative, it is not as if consumers were originally consulted by companies in the decision to source wood and paper products from endangered forest regions. Therefore, many environmentalists perceive their actions as exposing both bad environmental practices and the dispersed and opaque system of proxy consumer agency that drives unsustainable global supply chains.

The collective and proxy agency mobilized by ENGOs campaigns disrupted regime stability in the Great Bear Rainforest and the Boreal. By the time the Boreal forest was becoming an issue to marketplace actors, Canadian companies felt vulnerable to changing expectations, and "brand Canada" was being tarnished in the marketplace (see chapter 5). The conflict and threats of regime disruption enabled large buyers and environmental organizations to broker institutional openings directly with forest industry representatives and invest in the creation of solutions platforms to develop new institutional rules. Thus, targeted landscape leverage disrupted the incumbent forest regime, changed power relationships

between outsider environmentalists and regime actors, and re-distributed responsibility and power to a broader network of concerned actors who then had greater influence on public policy outcomes. Public conflict, political scrutiny and market actors' demands for change were translated into direct leverage when environmentalists entered into negotiations with industry. The disruptive pattern of agency directed new cultural, financial, political and psychological pressures onto institutional actors, encouraging them to adopt more innovative field frames in the forest regimes operating in the Great Bear Rainforest and the Canadian Boreal. In the case of the Great Bear Rainforest, this leverage continued to act to influence policymakers and ENGOs continued to pressure government to enshrine the original spirit and intent into law and policy. In the case of the Boreal Forest Agreement, these pressures led to new agreed-upon outcomes, but happened in the absence of a legitimate democratic process for determining land-use, presenting challenges later in both sustaining leverage via public scrutiny and also in linking Agreement goals to concrete policy vehicles for implementation. In comparing the outcomes from the Great Bear Rainforest and Canadian Boreal Forest Agreements (see Chapter 6), the higher degree of conflict and media visibility in the Great Bear Rainforest, and the related power that markets campaigns generated for environmentalists was one of the critical factors related to a more radical outcome in that region.

The disruptive pattern of agency was not only important during the phase of conflict, but it continued to play a critically important role throughout the institutional change process, which is not portrayed in other phased change models (e.g. Gunderson and Holling, 2002; Westley et al., 2002; Zeitsma and Lawrence, 2010). Disruptive agency sustained the drive towards the radical new field frame or paradigm that informed the *system redesign* pattern of agency, and generated potent *psycho-cultural change* dynamics which were necessary for changing people's hearts and minds, as described in the following section. The cultivation of conflict and uncertainty by environmentalists was an intentional strategy to stimulate psychological, behavioral and institutional transformation (see Chapter 4). Although

opponents sometimes experienced environmentalists' conflict-generating strategies as negative and confrontational, they elicited emotional upset and norm-questioning, and resulted in realignments of power, which in turn fueled transformative change. Finally, the pattern of *mutually reinforcing agency* also relied on the threat of disruptive agency to sustain the will and wider scrutiny necessary to implement transformative institutional arrangements. Environmentalists successfully pursued parallel strategies creating conflict to negotiating innovative solutions - all the while sustaining pressure for significant institutional change. Disruptive markets campaigns and negative corporate targeting strategies were advanced in concert with positive consumer alternatives via development of markets for FSC-certified forest products. In the Great Bear Rainforest the disruption also released energy within the previously entrenched forest regime that attracted new First Nations allies, empowered new vehicles for innovation and redirected resources towards visionary alternatives.

Generative Patterns of Agency: System Redesign and Psycho-Cultural Change

The next two patterns of agency were enacted within the "safe solutions space" or niche where bi-lateral negotiations took place between forest industry and ENGO representatives. According to social innovation approaches (Westley & Antadze, 2010), resilience (Gunderson & Holling, 2002), sociotechnical transitions (Smith & Raven, 2012) and institutional change theory (Zeitsma & Lawrence, 2010), niches are spaces where innovation can emerge and thrive. In response to institutional disruption, outside actors and key regime actors began to consider engaging with each other to resolve their conflict and create more legitimate and scientifically robust institutional arrangements. This involved the voluntary creation of an innovation niche (solutions space), but also required successfully navigating conflict to generate trust. Within the innovation niche, regime and outside actors proactively seized the authority to define new governance arrangements and forest practices without the initial or direct participation of government. Global strategies for greening the marketplace for wood products had the effect of extending the boundaries of the system in question. The bi-lateral negotiations between

forest companies and environmentalists in the Great Bear Rainforest and Canadian Boreal, despite occurring at the micro or niche level, therefore represent an extension of actor's agency, whereby wider institutional and ecological dimensions of systems were 'endogenized' - expanding the boundaries of the system institutional actors perceived as part of their necessary sphere of activity, and which could and *should* be acted upon (Garud et al., 2010).

Chapter 4 identified six processes of agency in the Great Bear Rainforest negotiations that moved from the individual (micro-level) to the collective group (meso-level), and finally extended out to impact the wider system of the regional forest regime (Riddell et al., 2012). The processes of agency were: creating powerful personal narratives for the good of the whole, humanizing opponents, tolerating conflict and uncertainty, focusing on solutions, building an inclusive vision, and understanding the dynamics and psychology of change. Very similar processes were also identified in the CBFA negotiations process, including: establishing a common vision, developing trust and humanizing opponents, acknowledging mutually powerful sides, working with conflict and psychological reactivity, focusing on solutions, and visionary, bridging leadership. When looked at together, two distinct yet complementary patterns emerged emphasizing 1) *systems redesign* and 2) *changing psychology, relationships and culture*. The two patterns of agency below interacted during the phase from conflict to innovation within the protected niche "solutions space" of negotiations, while disruptive pressures surrounded the niche. Together, they enabled the development of broad vision, new knowledge and more mature relational capacities, which were channeled into the development and prototyping of alternative practices and institutional arrangements.

System Redesign Process: The Visionary-Architectural Pattern of Agency

The second key pattern of agency is the visionary-architectural pattern of system redesign. Three aspects of agency make up this pattern, although this is not exhaustive. Visionary-architectural agency moved from individuals to the collective, involving: 1) new personal

narratives that valued the good of 'the whole', 2) focus on building and testing solutions, and 3) the adoption of common knowledge frameworks and a shared vision of systems redesign. Agency was initially expressed individually, widening to encompass collectives on each 'side' of the negotiation, and then widening again to involve collective, multi-sector agency. The first aspect involved development of new personal narratives, and the accompanying transformation in identify that enabled some individuals to step into an architect-like role (or meta-perspective, Grin, 2010) to co-create solutions by taking a wide ecological and social perspective. This quality of agency was not initially present in everyone taking part in negotiations, sometimes being expressed in the visionary leadership of key individuals (Bandura, 2006). The encompassing common vision that originated in several personal narratives included 'service to the whole' and desire and commitment to leave a legacy of a better world. Because the narrative valued the perspectives of others, through collaboration and negotiations it evolved to include more viewpoints and aspects of the system. The narrative or new frame was also influenced by how significantly the dominant frame had lost legitimacy and how much disruptive power was being wielded outside the process.

Key environmental and industry actors advocated for new knowledge frameworks and a shared vision, which created clarity about what solutions were needed and where to start. Getting into the negotiations process required a 'ceasefire' on both sides, with markets groups suspending their campaigns and companies deferring harvest in ecologically important areas. The safe negotiations space built both parties' belief in their ability to find solutions - enabling a shift to collective agency supported by collective efficacy beliefs (Bandura, 2006). Bandura (2006) also describes how strong vision coupled with the achievement of small goals along the way fuels self-efficacy beliefs, which are the individual and collective belief in one's ability to achieve desired futures. Parties involved in both negotiations processes talked about the value of small wins and the power of experimentation and testing new approaches as they were

envisioned and designed. This in turn enabled discussions about new governance arrangements, institutional redesign, and changing forest practices.

At critical times, leadership was needed to raise the collective gaze from conflict over details to refocus actors on their overall purpose, and the need for breakthrough. As the "projective" or visioning aspect of collective agency strengthened (Bandura, 2006) actors focused on mutual learning and solutions development and piloting. Ecosystem-based science, shared analysis and new management paradigms were developed in the safe solutions space. Key leaders brought "bridging capacity" which involved three aspects: linking previous, current and future possibilities together; integrating diverse perspectives and values into a larger frame; and re-arranging familiar issues and problem elements in new ways. Agency during the system redesign pattern therefore iterated between the individual and the collective, as actors' self-perception and beliefs about others shifted, shared knowledge widened their perspectives, and communication and relationship skills enhanced the collective capacity of the group to analyze complex issues and generate solutions.

An important aspect of the visionary-architectural pattern of agency came to light in Chapter 6, which compared the institutional impacts of the Great Bear Rainforest Agreement and Canadian Boreal Forest Agreement. The values and breadth of the replacement paradigm was found to delimit how transformative the innovations developed at the niche level can be. This research suggests that when more perspectives (especially social, cultural and ecological) are represented in the replacement frame, discontinuous or radical change in the system is more likely to result. As shown by this research, many other factors also influence the outcome of innovations. However the new values, norms and knowledge underpinning the replacement paradigm have a powerful effect on what gets re-institutionalized and whether innovations are simply assimilated by the dominant regime, whether they lead to incremental change, or whether they catalyze discontinuous change and transform the existing regime.

Factors such as actor legitimacy within the regime, the degree of conflict and institutional disruption, and the psycho-cultural change process in actors also influence the potential for transformative impact.

Psycho-Cultural Change Process: The Self-reflexive and Relational Pattern of Agency

The third key pattern of agency is psycho-cultural and relational, involving self-reflection, identity shifts and changing relationships. The three aspects in this pattern of agency include 1) humanizing one's opponents, 2) learning to tolerate conflict and uncertainty, and 3) understanding the dynamics and psychology of change. This pattern was enacted in safe niche spaces where systems are being redesigned or innovation is being developed. The psycho-cultural pattern refers to the ability of actors to processes the energy of external conflict into changes in identity and perspective, fostering self-transformation and a widening sphere of relationships and concern. The actors who deliberately cultivated this pattern of agency understood that psychological change was necessary to change relationships, and the resulting culture of engagement between stakeholders was necessary to accomplish institutional change. This cultural change originated with self-reflexive behaviour, willingness to learn and the development of trust, which enabled actors previously in conflict to begin to collaborate. For both parties, this involved an expansion of identity from being an outside agitator or profit-generator, to becoming an architect of change. This identity shift both enabled and co-arose with the extension of agency and responsibility actors expressed by engaging with complex challenges ostensibly outside of their direct sphere of control.

This pattern of psycho-cultural change occurred over years, and extended from individuals to the collective during the solutions process. During negotiations, representatives began to recognize the valuable contributions coming from their opponents as they developed personal relationships, trust and mutual respect for the knowledge and perspectives each side brought

to the table. Trust and relationship-building enabled actors to navigate conflict and uncertainty by opening up new avenues to change behavior and explore possible solutions. The source of the conflict must also be considered, however. During negotiations, in addition to conflict arising from clashing beliefs inherent in any negotiation, both sides were engaged in actions perceived as inflammatory by the other (i.e. ongoing campaigning and logging in contentious areas). The initial disruption caused by ENGO's markets campaigns continued as an ongoing threat, as did the logging operations of some companies. When actors in conflict were able to acknowledge and reflect on this, it fueled honest communication and expressions of anger, which sometimes resulted in changes in perspective that led to breakthroughs. Through repeated experiences of this pattern, the culture of engagement between representatives from forest companies and environmental organizations underwent transformation.

An important relationship existed between the conflict experienced by regime actors and environmentalists, the degree of transformation in viewpoint this led to, and the resultant management paradigms the two groups were able to agree on. In the case of the Great Bear Rainforest, conflict was accompanied by newfound economic and legal power from environmentalists and First Nations, who could therefore insert principles and approaches for addressing social and economic justice *and* the ecological rarity and importance of old growth rainforests into the framework guiding solutions development. The emotional conflict resulting from both deep reflection and necessity, coupled with the realization that other stakeholders brought valid and eye-opening perspectives, caused the forest industry executives most deeply involved in negotiations to fundamentally revisit their own views on the value and appropriateness of industrial forestry on BC's remote coast. This depth of transformation in perspective was not articulated as consistently or profoundly among actors involved in the Boreal Agreement process, which in turn may help account for why the CBFA has not effected significant institutional transformations, and illuminates the central

relationship between the *visionary-architectural pattern of system redesign* and the *self-reflexive and relational pattern of psycho-cultural change* in successful institutional change processes.

New relationships and tentative solution-development was aided by skillful, neutral facilitation and the structure of interest-based negotiations. This structure helped change the rules and norms of the parties' relationship, as actors learned to communicate from interests rather than positions, to empathize with other perspectives, and to forge shared goals and strategies. The new culture of engagement, supported by the structure of interest-based negotiations, was necessary to sustain and translate the intention behind both Agreements into the implementation phase. However, this psycho-cultural change process had to be spread or recreated with new actors as the implementation process extended beyond the people and organizations first involved to include widening networks of actors from industry, governments, First Nations, and environmentalists. Moving from the phase of system innovation to restabilization, the individual and collective processes of agency must begin anew with a wider group of actors. It remains a challenge to the parties of both the GBRA and CBFA to spread the unique culture and of engagement and the "spirit and intent" the Agreement goals that were the product of an intensive negotiation process. Experience from both Agreements shows that spreading the culture and informal rules established within a solutions space is difficult, and inability to spread both the visionary-architectural pattern agency involved in systems redesign *and* the accompanying psycho-cultural change process that supports new forms of self-reflexivity, identity and relationships, there is significant risk that the transformative intent of innovations will not be achieved. The next pattern of agency sheds light on the strategies for sustaining the impetus necessary to implement transformative innovations.

Mutually Reinforcing and Distributed Agency

The fourth pattern of agency is *mutually reinforcing and distributed agency*, which involved an ability to weave the previous forms of disruptive and generative agency together across scales and over time, using individual, collective and proxy means. This pattern was enabled through strong actor coalitions, distributed networks, a comprehensive vision capable of wielding both disruptive and generative influences, and attunement to timing, context and interpersonal dynamics. Mutually reinforcing, distributed agency requires actors to take a meta-perspective on the issue of concern in the context of the wider systems that are giving rise to the complexities of the problem. Over time, this quality of agency involves the skillful navigation of psych-cultural change processes in order to generate innovative responses and navigation of power structures in order to change institutional arrangements.

According to Grin (2010) the strategic agency involved in orchestrating mutually reinforcing transitions involves 1) envisioning and advancing novel practices at the niche level 2) opening up new institutional structures in relation to regime and landscape constraints/opportunities; and 3) sustaining ongoing connection between novel practices and new structures to create a cycle of mutually reinforcing change. This research affirms these aspects and suggests additional strategies - primarily through *creating and sustaining disruptive influences* over time and space by harnessing the proxy agency of powerful, distributed actors, and deliberately translating these into pressures felt by regime actors. Figure 17 shows how the cycle of reinforcing change began with *disruptive agency* during the phase of conflict, where landscape leverage strategies of environmentalists weakened the boundaries of the regime. Disruptive pressures within the regime were reinforcing, because they targeted the incumbent regime across interacting domains of discourse, markets and policy - opening up new political and industry opportunity structures (see Chapter 5, Table 4). This disruption continued as regime and outside actors moved into a solutions space niche to envision and advance novel practices together. During the negotiations/innovation phase, generative individual and

collective modes of agency enabled *system redesign* and *psycho-cultural change.* Environmentalists sustained the ongoing connection between niche innovations (e.g. protected areas and ecosystem-based practices) and regime openings by wielding the ongoing threat of conflict and negative economic repercussions from markets campaigns through landscape leverage strategies. Coupled with the threat was also the promise of marketplace leadership when companies adopted highly sustainable practices.

In the cases studied here *mutually reinforcing and distributed agency* also involved the "inside-outside" strategies of environmental actors, who simultaneously sustained threats against the forest industry while generating collaborative solutions with them. Inside-outside strategies blended disruption through proxy agency from distributed network of actors along the supply chain for forest products, with individual and collective innovation processes at the niche level during the innovation phase, with the ongoing marketplace threat to encourage adoption of substantial ecological values into the regime (within Canada and globally). Chapter 5 highlighted environmentalists' role as roving, transition-focused actor-networks with a unique ability to tip systems towards sustainability, compared to other actors who are more institutionally embedded. Environmentalists' mutual reinforcement strategies spanned spatial *and* institutional scales by engaging the global supply chain and creating a voluntary platform for global, non-state forest governance form through FSC-certification. Finally, when solutions were sufficiently developed at the niche level, regime actors worked with newly legitimized outside actors (First Nations in the GBRA, and ENGOs in both Agreements) to broker implementation of new institutional arrangements into the regime, with a primary focus on collective, multi-sector agency. Despite the emphasis on collective implementation of new institutional arrangements during the phase of system restabilization, the marketplace threat that originated through the pattern of disruptive agency still played a key role to ensure new rules and institutional structures were fully adopted into the regime.

Mutually reinforcing agency required the ability to hold a meta-perspective spanning many dimensions of a system (across sectors or domains, and over time and space). This meta-perspective supported the design of interventions and partnerships capable of generating multi-level and reinforcing pressures and incentives for change. International networks of environmentalists acted as intermediaries to connect up regional struggles with a global change agenda, enabling innovations in one region to influence the practices or policies in another. In this sense, the distributed agency of the mutual reinforcement pattern is similar to cross-scale social innovation networks described by Westley and Moore (2009) and the intermediary organizations described in transitions literature (Geels and Deuter, 2006; Hargreaves et al., 2013). Mutual reinforcement strategies have long-term and collaborative aspects, as expressed through ongoing efforts to improve FSC-certification, push corporate procurement towards an ever-broader ethical orientation, and ensure regional agreements are implemented according to their initial transformative vision. As such, historical accomplishments that become institutionalized also act as ongoing platforms to drive innovation over time, which is another expression of mutual reinforcement agency.

After the Great Bear Rainforest and Canadian Boreal Forest Agreements were formalized, the mutual reinforcement dynamic took the form of political brokering via collective agency, the proxy agency of markets threats applied at critical points, and highly technical, detailed collaboration work across sectors in order to institutionalize new knowledge, practices and policy in governance regimes. This phase of institutional restabilization has taken almost ten years so far in the Great Bear Rainforest, and much of this work is still yet to be done in the case of the CBFA. In chapter 6 I identify several critical factors that influence how successful systemic change efforts will be in the restabilization phase. Some influential factors carried over from the innovation phase, including the breadth of the new frame or values guiding the solution, and the scope and complexity of the undertaking. Other influential factors during the restabilization phase were the readiness of political vehicles for implementation, the resources

mobilized for implementation, and the long-term involvement of senior actors.

Summary of Patterns of Agency Across Scales

These four patterns of agency are interrelated, and the final pattern, mutually reinforcing agency, involved the ability to connect and orchestrate the different forms of individual, collective and proxy agency through different phases of change. Together they suggest a more comprehensive theory for social change agency that highlights how different forms of individual, collective and proxy agency (Bandura, 2001) span social structures over time and space and that deliberate, distributed orchestration of agency across scales can bring about systems-level change. The four patterns are not exhaustive, but they provide important new theoretical insights into the research question of what forms of strategic agency fueled transformative change, as well as a meta-paradigm perspective for analyzing agency by drawing on concepts from four separate yet related theoretical approaches to innovation and systemic change. Based on case comparison my findings suggest that when these four patterns are strongly represented, they translate into greater transformative impact on the system of interest. Table 8 summarizes the three modes of agency (Bandura, 2001), and the four key patterns of agency identified at each phase of system change, and includes categories for the influential level during that phase (micro/niche, meso/regime or macro/landscape) based on levels of the multi-level perspective (Geels, 2005) was well as the influential scale of governance and geography, to better incorporate the local-global dynamics observed in this case. The factors that influenced the potential for systemic impact from Chapter 6 are also included in the phase of change with which they are associated. The table illustrates how different modes of agency in both disruptive and generative forms were interwoven across levels and spatial scales over time, and how they differ by phase.

Table 8. Meta-theoretical insights into patterns of agency showing modes and patterns of agency, the level and geographic scale where agency is most often directed, and other factors found to affect systemic impact of change associated with the four phases of system change.

Phases:	System Stability	System Disruption	System Innovation	System Restabilization
Modes Of Agency (Bandura, 2001)	**Collective agency** of regime insiders maintaining systems **Proxy agency** distributed regime support (intentional and not) **Individual agency** of outsiders seeking collective strategies	**Collective agency** of outside actors to frame problem, mobilize proxy agency to respond **Proxy agency** of distant actors (consumers, shareholders, CEOs, celebrities) **Collective agency** of regime actors to defend	**Individual agency** of outside and regime actors (risk-taking, trust) Leads to **collective agency of each sector** Leads to **collective multi-sector agency** **Proxy agency** continues as scrutiny, threat	**Collective agency** (sectoral and multi-sector) **Proxy agency** (distributed regime support)
Pattern of Agency	**Sustaining agency**	**Disruptive Agency** of landscape leverage **Reinforcing agency** of outsiders to mobilize leverage and connect to regime actors	**Generative Agency** Psycho-cultural change and System redesign **Disruptive agency** **Reinforcing agency**: to sustain pressure, create new platforms, bring innovation from across scales	**Generative Agency** to spread vision, relationships & innovation to new actors, broker implementation, direct resources **Reinforcing agency:** to sustain pressure
Influential Institutional Level	**Regime**	**Landscape** (leverage) Regime response	**Niche & Landscape** Secondary: Regime	**Regime** Secondary: Landscape & Niche
Geographic Scale	Provincial jurisdiction Distributed markets	Key global markets and certification Specific 'hot-spots' or contentious regions	Multiple - global (markets, FSC); local, regional, national	Provincial jurisdictional Distributed markets
Factors affecting system impact	Existing goals and stable regime field frame	Degree of conflict and media visibility Power of negotiating actors	Values and breadth of new frame Scope and complexity of initiative	Political readiness Resources available Long-term actor involvement

Limitations of Research

As noted in Chapter one, there are several limitations of this research. The multi-paradigm approach brought theoretical richness, but due to the application of selected lenses, it does not represent a full meta-theoretical integration between social innovation theory, resilience, sociotechnical transitions and institutional theory. This is the work of a generation of scholars. However, because of the focus here on multi-level dynamics and agency, other relevant lenses

from the theories may have been overlooked. Furthermore, the primary focus on civil society actors meant that the agency expressed by other actors and sectors was de-emphasized - in particular the important role of First Nations, forest companies, and government. Additional research taking a multi-level view on change could build on the insights here about the role of environmental actors in particular.

Because the research was based on a comparison of two cases, it may also have limited generalizability, given the importance of contextual and emergent factors in influencing change processes. These findings remain exploratory and would benefit from further research. In particular the framework for evaluating systemic social innovation represents a small first step in a much more detailed process where definitions are expanded, and relevant indicators and methods for collecting the information would be further developed and tested. Furthermore, other relevant theories could have been included in the multi-paradigm review, such as actor-network theory or social movement theory, which would have revealed different patterns of agency and unique insights about the case.

The model of agency developed above also has limitations. Greater attention could have been paid to the reconstructive forms of agency involved in successfully navigating political dynamics, and brokering and implementing new institutional arrangements. Here, the growing literature on institutional entrepreneurship (Battilana et al., 2009; Dorado, 2005; Maguire et al., 2004) would have much to contribute. Furthermore, these patterns, and their arrangement over time, represent on particular pathway of change, where disruption was initiated by outside actors and their institutional embeddedness was low. This model of agency may be specific to this systemic condition. Zeitsma and Lawrence (2010) offer more insight into the strategies of embedded agents in related cases of forest conservation, and the literature on embedded agency may further contribute to understanding the agency of the more institutionally embedded actors (see Green, Li and Nohria, 2009; Greenwood and Suddaby, 2006; Seo and Creed, 2002). On a related note, the dynamics, strategies and change

trajectory are consistent with the change in paradigm or worldview from modern industrial-era, capitalist institutions designed with the aim of efficient resource development and short-term wealth creation using somewhat narrow economic metrics of success, toward a worldview emphasizing social justice, cultural thriving, sustainability and ecosystem values along with long-term human-well being. The cases also occur in a governance context where there is a healthy democracy, the rule of law, and protection of civil liberties. In places where democratic institutions are not well-developed, disruptive agency of the kind enacted by environmentalists may lead not to positive institutional evolution, but to arrest or violent consequences. Therefore, while the global markets and governance structures may be the same, the pathway of transition might look very different when the worldviews and political systems are at different levels of development. Similarly, in 50 years, the 'leading edge' of worldviews based on new ethical orientations and ecological understandings will differ, and the mode of conflict as well as the solutions generated may look considerably different.

Theoretical Implications and Further Research

My research into forest regime change through Great Bear Rainforest Agreement and the Canadian Boreal Forest Agreements has provided new insights about the dynamics of large-scale and deliberate change, in particular the strategies employed by civil society actors to catalyze transformation in locked-in systems. I also aimed to advance transdisciplinary theoretical resources available for tackling wicked problems, especially those posed by our looming ecological crisis. I complement existing approaches to social innovation with other process-based theories that have emerged in parallel to engage with the complexity of 21st century social and ecological challenges. The section above summarized the main research findings and synthesized them into a meta-paradigm theory that describes four patterns of agency wielded by outside actors, which operate over phases of change and across scales. The synthesis of my research findings contains theoretical implications regarding both the forms of

social change agency and the overall process involved in transforming locked-in institutions. In addition, my comparison of the systemic impacts at regional, national and global levels of the forest regime has implications for evaluating social innovation and large-scale change initiatives. Below, I discuss the theoretical implications flowing from my research, and suggest areas for further research. First, I describe meta-paradigm insights, and then four other areas of implications and further research: conflict in social innovation processes; the role of outside actors; the scale and complexity of new political spaces; and finally, unpacking agency.

Meta-Paradigm Insights

Several meta-theoretical insights emerged which suggest directions for further multi-paradigm research approaches. The theories of change included in this multi-paradigm review each contribute unique conceptual resources for understanding spatial-ecological systems, governance systems, and institutional systems across scales; interactions leading to the emergence of novelty and opportunity in different domains; and the role of strategic agency of individuals and groups in catalyzing disruption and generating innovative new forms of institutions. Each theory has a unique system of concern and historical trajectory, yet they converge in recognizing the importance of interactions across scales and different domains, in collective adoption of structuration and institutional theories, and in their attention to processes of phased change. While each theory provided unique insights about the role of strategic actors in their system of concern, these insights had not been connected or synthesized across theories until now. This section reviews some of the blind spots in the different theories, showing how their interaction can strengthen further research and theory development into innovation processes and systemic change.

One key theoretical gap or lacuna illuminated by the multi-paradigm review concerned the micro-dynamics of agency involved in psychological transformation and relational change. Theorists in sociotechnical transitions, resilience, social innovation and institutional theory are

all influenced by Giddens (1984) (e.g. Grin et al., 2010; Geels and Schot, 2007; Westley and Antadze, 2010; Westley et al., 2002; Zeitsma and Lawrence, 2010). While Gidden's theory of structuration presents a macro view concerning patterns of agency and various actor roles across institutional scales, it does not fully address the micro view of individual psychology, personal transformations in values and perspective, and the impact of these micro-dynamics on relational interactions and broader social systems structuration. Likewise, changes in discourse and actor strategies may be analyzed using institutional and agency-based approaches (e.g. Maguire and Hardy, 2009; Zeitsma and Lawrence, 2010) without illuminating the individual or shared psychological meanings and processes that underlie discursive or normative change in institutions. Resilience theory also lacks robust concepts for psycho-cultural patterns of adaptation and transformation, in particular at individual and relational levels.

To remedy this, my research drew on the socio-cognitive agency theory of Bandura (2001, 2006), thus providing greater insight into personal, collective and proxy forms of agency. As my research has shown, these psychological micro-dynamics have important implications for understanding cross-scale change processes and transformative social change, and should be integrated more fully into these four theories of change. Additional research directions could take a constructive-developmental approach (e.g. Brown, 2012; Cook-Greuter, 1999; Fischer, Merron and Torbert, 1987; Torbert et al., 2004) to gain greater understanding of the relationship between worldview development, psychological maturity, and effectiveness in navigating complex systems in individuals and groups. A constructive-developmental approach can also contribute to multi-paradigm research because ontology and axiology have developmental aspects – in other words, different research paradigms can be associated with differing levels of values and worldview maturity (Torbert et al., 2004).

Each theory described above contributes concepts for understanding the difference between incremental change and transformative change, yet there are still theoretical gaps

regarding evaluating the impacts of change, be they in disrupted and reorganized institutions (Zietsma and Lawrence, 2010), transformed social-ecological systems (Folke et al., 2010), or social systems where innovation has taken place. Geels and Schot (2007) observed that to evaluate whether transformative change has taken place, the empirical level of the object of analysis must be specified. Despite the difficulty of assessing incremental versus transformative change, it is clear that new evaluative measures of transformative change in social systems are needed which can capture the complexity of social processes, agency and systemic change outcomes. To improve the analysis of systemic change outcomes, each theory applied here (social innovation, resilience, sociotechnical transitions and institutional theory) would benefit from additional conceptual distinctions to capture both the degrees of social structuration in systems, and geographic and governance scales. As discussed in the multi-paradigm review, sociotechnical transitions levels signify increasing degrees of institutional structuration and stability between actors, structures and practices (Geels & Schot, 2010), while ecological and governance holarchies exist along a spatial scale, spanning from local to regional to national, to international/global levels (Gunderson and Holling, 2002).

Greater theoretical integration between these complementary systems could also yield new perspectives and opportunities for addressing unsustainable systems of extraction, production and consumption - and should be the focus of further research. Resilience theory and practice brings strong place-based knowledge about how to implement adaptive and ecosystem-based governance, in relation to nested governance and ecological patterns and scales. Yet, the focus on systems is tied to specific spatial locations/ecosystems, and therefore does not lend itself to focus on sustainability challenges that are driven by distributed socio-cultural patterns such as overconsumption, or greenhouse gas emissions. In contrast, social innovation theorists and practitioners pay scant attention to the linked social-ecological nature of the world's most daunting problems such as overconsumption, vulnerability to climate change, energy transitions, or loss of ecosystems and species. Social innovation approaches are market-

focused and entrepreneurial, and may as a result be naïve to power. The social innovation discourse would benefit from critical dialogue about the role of capitalism, and more deconstruction of the history, privilege and power dynamics inherent in locked-in systems, to complement the focus on diffusion of innovation models and collective impact, cross-sectoral and 'design lab' processes that do not address the need to disrupt the existing context in order to shift wider power structures and leverage implementation of solutions. Social innovation theory can, however, contribute broad-based models that include the myriad programs, platforms, processes and initiatives that generate the creativity and novelty necessary for catalyzing change in social systems, and models for understanding scaling strategies beyond a market or product-based approach (e.g. Westley and Moore, 2009; Westley et al., 2014).

In contrast, sociotechnical transitions theory is highly focused on the role technology plays in innovation, and the sustainability transitions strand in particular requires more attention to politics (Smith and Stirling, 2010), as well as an extension beyond focus on technology as the central generator of innovation. Models of agency in sociotechnical transitions also privilege the niche as the main locus of agency, and thereby overlook important dimensions of proxy and collective agency - explained perhaps by the emphasis on technology and not on broader processes of social innovation. However, niche-oriented, regional, and grassroots (bottom-up) models of change agency don't adequately capture the role of global movements and the distributed nature of agency in the global marketplace. Furthermore, by defining the macro-landscape level as exogenous to the influence of actors, the multilevel perspective renders invisible the cumulative impacts of deliberate long-term change efforts. As the sustainability transitions strand grows, and converges with the growing European discourse on social innovation (e.g. HUBERT, 2010; Caulier-Grice, 2012; Haxeltine et al., 2013), the focus on technology will inevitably broaden to encompass other social processes.

Finally, while institutional theory excels in analyzing the strategies of outside and institutional actors, the role of discourse, and political dimensions of change (Maguire and

Hardy, 2009; Maguire et al., 2009; Zeitsma and Lawrence, 2010), it lacks robust frameworks for analyzing cross-scale change (for exceptions Bitektine and Haack, 2014; Gray, Purdy and Ansari, 2015). The research focus on institutional change also emphasizes process and strategies, whereas there is less analysis comparing the impact of different strategies and whether they have incremental or transformative outcomes. Despite these underdeveloped areas on institutional theory, it has already been widely adopted by resilience, sociotechnical transitions and social innovation theorists - speaking to its contribution in illuminating discursive, cognitive, normative and regulative change processes and actor strategies (Scott, 1995).

When these theories are brought together, many of the blind spots resulting from the historical trajectory of each theory can be illuminated, and conceptual bridging can occur. That vision can even become kaleidoscopic (Lewis and Grimes, 1999) when multiple theories and conceptual approaches are brought together to analyze change processes. Such research could connect the sophisticated multi-level constructivist approach of Geels (2005) and other sociotechnical transitions theorists with institutional theory to look at more cases that span both techno-economic regime structures and the ecosystems implicated in supply chains and global consumption (Gunderson and Holling, 2002; Smith and Stirling, 2010). Based on the findings here, this inquiry can be complemented by deeper focus on the socio-cognitive and psychological process of agency. Such a broad undertaking could yield important new insights into the increasingly expanding field of human agency that is emerging as the world becomes ever more complex and the results of human activity affect planetary systems and life conditions in far-reaching ways (Bandura, 2001; 2006). The next sections contain further discussion of the findings and implications of the research, and suggest directions for further research.

Power and Conflict in Social Innovation Processes

The cases highlight the disruptive and generative function of conflict, and that it can be fruitfully cultivated or wielded over longer time periods than most innovation literature suggests. Conflict served initially to disrupt locked-in systems, during the middle phases of institutional innovation it influenced the establishment of a more radical reframing of institutional arrangements, and finally the threat of conflict provided leverage at the stage of implementation or re-institutionalization, to ensure the spirit and intent of the policy innovation and related institutional arrangements were is formally established.

Markets campaigners refer to their approach as "inside-outside" strategies, which deliberately cultivate tension through the parallel and reinforcing use of both conflict *and* collaboration as strategies for generating institutional change. Counter to Den Hond and Baker's (2007) findings that radical environmental groups play stronger roles during de-institutionalization, while reformist groups play a larger role in re-institutionalization, my research suggests both roles can be inhabited by the same people and organizations, and this can be a source of deeper institutional transformation. ENGO campaigns challenged the institutional logic of the dominant regime, redistributed power to regime challengers, and advanced co-generated institutional innovations. The value and role of deliberate conflict strategies wielded over time adds nuance to the true, but partial, view prevalent in innovation discourse to do with the power of invention to cause change. This view is exemplified by R. Buckminster Fuller's quote: "You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete." In contrast, my research suggests that re-dressing power imbalances and breaking locked-in social systems inevitably involves some experience of personal, interpersonal and social conflict. Fuller's view is somewhat naïve to power and the inertia created by sunk costs and vested interests.

The ongoing importance of conflict in generating innovation has implications for social innovation practices that emphasize "collective impact" and "design labs". Innovation activities are often framed as entrepreneurial and generative "redesign" processes capable of sidestepping or leap-frogging conflict. Multi-stakeholder change-labs and design labs are gaining increasing popularity as a vehicle for intervening in complex problem domains to generate innovative solutions. Yet, these vehicles rely primarily on the second pattern of agency - the visionary-architectural process of system redesign. Collaborative initiatives for advancing social innovation may be overlooking the important role conflict plays at each phase of a change process and as such may suffer from a lack of transformative impact. Further investigation of the role of conflict over the phases of system innovation could address the role of conflict during generative processes and its role in catalyzing more radical frame changes, and supporting psycho-cultural transformations among actors. In addition the fourth pattern of distributed agency points to the need for ongoing political reinforcement leverage to ensure transformative ideas or designs get implemented with their original potency and are not just slowly co-opted or resisted by institutionally embedded actors (Gray et al, 2015; Lawrence, 2008). More broadly, this points to the need for more sophisticated analyses of power in social innovation theory and practice, especially in topics related to scaling.

The Role of Outside Actors

This research finds that when more radical outside actors stay involved in institutional or social innovation processes over time, they are able to help institutionalize more radical changes, instead of passing responsibility for implementation to inside (or reformist) actors as is suggested elsewhere (Den Hond and Bakker, 2007; Hardy and Maguire, 2009; Zeitsma and Lawrence, 2010). Hardy and Maguire (2009) state that in order for outsiders to stabilize new institutional forms, new actors with different power and knowledge play important roles. Zeitsma and Lawrence (2010) describe how the transition to innovation empowers receptive insiders to create new field boundaries. However, in the case of the Great Bear Rainforest, the

outside actors agitating for change went inside, but retained their orientation, successfully establishing far more radical conservation-oriented and ecosystem-based scientific paradigm to guide transformation of regional forestry institutions. While ENGOs drew heavily on expert resources and hired foresters and economists, the more radical organizations and political actors with marketplace leverage, relationships and conservation knowledge continued to be directly involved during the collaborative implementation processes. In other words, Greenpeace was playing a lead role at the table, not hanging from buildings outside while more reformist groups negotiated. In both Agreement processes, environmentalist outsiders pivoted to become the lead stewards of innovation, from the collaborative solution development phase to their implementation into law and regulation. Related to this, Hensmans (2003) observes that the more successful outsiders are in changing regime practices, the more they become the dominant incumbents.

This idea of long-term engagement for outside actors resonates with Lounsbury et al. (2003) who describe how recycling activists shifted strategies from conflict to a negotiated and collaborative approach. In this case, my research suggests that coalitions can help outside agitators shift roles to become powerful architects of collaborative solutions, but if coalitions are too big or politically divergent they may disintegrate over strategic disagreements, as was the case with the departure of markets groups from the CBFA. The case comparison between the Great Bear Rainforest and CBFA hold important lessons for the broad social-environmental movements mobilizing worldwide to stop further development of fossil fuel infrastructure and take strong policy action to avert the worst effects of climate change. In particular the cases illustrate the importance of inside-outside strategies, the power that can be gained through financial strategies, and some of the pitfalls large visionary initiatives can face due to overwhelming jurisdictional complexity and a focus on incremental gains.

The Scale and Complexity of New Political Spaces

New concepts are required to understand the way particular actors and sectors (especially global corporations and civil society actors) are responding to and driving emergent patterns of social relations across spatial and sovereign boundaries. The GBRA and CBFA cases have required and effected the constitution of new political spaces - both globally and domestically (Affolderbach, 2011; Shaw, 2004). This has important implications for the site of analysis of social innovation, when such actors are involved. One might even ask, can systemic innovation ever be local? Furthermore, this underscores the need to build on the insights of Raven et al. (2012) and go beyond sovereign states as an assumed political unit of analysis in developing theory and research of resilience, social innovation and sustainability transitions. This implies the need to develop not just one set of multi-level approaches that are capable of dealing with spatial hierarchies and heterogeneity in governance systems, as well as ecosystems, culture and social systems.

The relationship between scale and systemic change initiatives is an important one. This case comparison contributed new insights about the challenges involved in scaling when the focal system for innovation spans multiple jurisdictions. The jurisdictional complexity of Canada's Boreal forest may have been too great to achieve institutional transformation. Similar to Goldilocks and the three bears, Clayoquot Sound's model was "too small" to effect broad institutional transformation, and the economic development opportunities for First Nations forest ventures were limited by the availability of forest land in the region. The Great Bear Rainforest may have been "just right", to link up cultural-social-ecological concerns and drive comprehensive institutional transformation - but only in that region. The CBFA may prove to be "too big" to scale, given the ongoing failure to accomplish Agreement goals and milestones, the resistance of First Nations, and the challenge involved with syncing up with multiple planning processes in different jurisdictions and political contexts. The major achievement of the CBFA in hindsight may be that it introduced a missing platform for more

comprehensive Boreal forest and caribou management. In this scenario, the CBFA Secretariat acts as a mechanism at best to seed new national-level forest governance institutions with clear conservation goals, and at minimum to foster ongoing collaboration between formerly conflicted stakeholders. This, however, falls short of the CBFA's grand vision of enshrining comprehensive protection for caribou across Canada and breaking innovative ground in 'the world's largest conservation agreement'.

The failures of the Canadian Boreal Forest Agreement underscore the question of what scale is too big, and how many jurisdictions are too many when attempting large-scale policy change? The decision in the Boreal to limit the stakeholders, and not include First Nations' well-being or economic redistribution in the approach was due to the political and legal complexity facing the actors seeking to advance the goals of the CBFA. This raises important questions such as: How do such social and ecological tradeoffs get articulated, navigated and mitigated when necessary? Who should be involved in these decisions? And how might large-scale challenges be addressed without leaving community-level or smaller stakeholder concerns behind? These questions require deeper engagement in the literature and by practitioners seeking to scale social innovations or system-change initiatives. Here, the sustainability assessment literature might contribute useful examples and thinking about finding synergies and tradeoffs (e.g. Gibson, 2006).

This research illuminates not just scaling out (diffusion) or scaling up (institutional change) dynamics (Westley et al., 2014), but the way in which scale acts as a perceptual context for actors, in terms of how system boundaries are defined and the way that scale is a psychologically and socially constructed. Scale is a product of how actors perceive, rather than simply a given category. The multi-level theories applied here to analyze the cross-scale interactions between structures and agency can provide useful heuristics to guide further investigation. This process of co-emergence and the practice of multi-level agency, in the form

of these four patterns and across personal, collective and proxy agency especially warrant further research.

Comparison between the two Agreements also suggests that the transformative power of an innovation can increase with the breadth of its inclusiveness. The Great Bear Rainforest process developed responses to address cultural conservation and enrichment, advance ecological resilience, provide social benefit, enable a post-colonial confrontation with injustices and initiate new financial vehicles for First Nations community economic development. This scope of innovative vision was fueled by transformations at several levels: in personal awareness, in the dynamics and beliefs underlying interpersonal relationships, and in the culture of engagement across sectors. In light of these findings, the concepts of 'social-ecological systems' from resilience theory and 'socio-technical regimes' from transitions theory may be insufficient to capture the breadth of systems necessary to respond to the scope of contemporary crises. Both theories could benefit from incorporating new lenses for understanding psychological and identity change, processes of meaning-making and values change, in system or institutional change.

Overall, my research suggests that social innovation and transition efforts can benefit from addressing 'joined up problems'. Beyond just engaging the system touching one problem domain, aiming to solve multiple problems at once can result in more radical systems impacts. A wider problem definition can open up unforeseen solutions, and the diversity of actors and sectors engaged can bring different perspectives and new power to effect change. The effects from addressing joined up problems could be further explored in research that looks at the influence of broader versus narrower problem definition and varying levels of inclusion of stakeholder perspectives in collective change efforts, and their relationship to radical outcomes. At the same time, this approach clearly has limits, as the complexity can become overwhelming. Further research could make more robust comparisons of cases where a wide

problem framing enhances people's effectiveness in tackling wicked problems, and where it acts as an obstacle, analyzing conditions and strategies associated with each.

Unpacking Agency

The four patterns of agency identified in the model (Figure 17), and their connection to the factors that influence transformative institutional outcomes would benefit from additional case research to corroborate them. Chapter 4 and the meta-paradigm synthesis in the conclusion contain important findings about the relationship between individual and collective agency, and how this translates into systemic impact. Catalytic circumstances can arise through the interactions of systems at many scales, and many such episodes are uncontrollable, cascading upwards and downwards throughout a system. Yet, Garud et al. (2010) point out that locked-in conditions perceived by actors in one part of a system as "exogenous" or not subject to intentional influence, can actually be defined *within* the boundary of another actor's system, and therefore be open to influence. Agency is deeply related to perception and awareness, as well as feelings of self and collective efficacy (Bandura, 2001). When environmentalists traced old growth logs leaving Clayoquot Sound to corporate buyers, they initiated markets campaigns against Pacific Bell Telephone and Scott Paper. Their original intent was to protect Canadian rainforests, but they partnered with allies who also sought to shift global paper and wood markets. By mobilizing collectively, and taking a global perspective by including the supply chain, international markets and customers of forest products, environmentalists expanded their sphere of agency such that systemic change at the macro-level became achievable.

This process of endogenizing systemic problems suggests further importance of "self-efficacy beliefs" (Bandura, 2006) in the ability to effect transformative change. This expansion of spheres of activist agency through taking wider perspectives may have significant implications for theorizing about the role of agency in complex systems, especially in relation

to the role that learning and personal transformation may play in the ability to effect change in relationships and broader institutions. More data and case analysis is needed to understand the dynamics of self-transcending subjects who are capable of re-evaluating their role in a system and endogenizing systems at wider scales. How actors endogenize systems dynamics that were previously believed to be beyond their ability to affect or transform is a very interesting question. This is related to questions about the role of identity, processes of psychological and ethical maturation and the development of perspective-taking capacities. Other questions to guide such research could include: What are the individual and collective processes by which actors reconfigure their vision and extend their ability to act? And, how does the cultivation of meta-perspective through individual and collective systems learning influence transformative action?

Summarizing socio-cognitive research on what makes groups successful in attaining results, Bandura (2001, p. 14) emphasizes the importance of perceived collective efficacy: "…the higher the groups' aspirations and motivational investment in their undertaking, the stronger their staying power in the face of impediments and setbacks, the higher their morale and resilience to stressors, and the greater their performance accomplishments." Therefore, in the face of significant contemporary societal challenges, it is critical to understand more about the dynamics and cultivation of perceived collective efficacy, and how this belief in the ability of a collective to achieve impact influences successful systemic change efforts by actors from different sectors, as well as the conditions under which collective, cross-sectoral efficacy is strengthened. Bandura emphasizes that efficacy beliefs reside in the individual (2001), which is supported by findings in Chapter 4 - pointing to the importance of further inquiry into the process of psycho-cultural and spiritual development in relation to deliberate change efforts.

Thus far, discussions of proxy agency are virtually absent from innovation and large-scale change literature. There are many questions to be answered about how proxy agency -

especially the proxy agency of market-based actors such as investors, large purchasers and consumers - functions in social innovation and sustainability transitions, especially in light of the rapidly evolving global social media context. These cases of forest regime transition contribute a robust example to build on Grin et al.'s (2010) somewhat under-described notion of mutual reinforcement dynamics, and an empirical example of "distributed competence for strategic agency". Further investigation is needed to more fully explore these dynamics and their role in fostering transition, but the findings here suggest that trans-boundary actors - both civil society organizations and multi-national companies - may be uniquely situated to mobilize reinforcement dynamics and distributed or proxy agency. Further research on the role of civil society in catalyzing system change could look how such organizations and their networks are able to frame and respond to social-ecological problems differently because of their ability to span supply chains from extraction, to production, to consumption - particularly by storytelling and campaigns focused on mobilizing collective and proxy agency.

Returning to the original research question, many insights have been gained about the process of social change agency across scales in complex and locked-in systems and strategies for cultivating transformative change. A resounding theme throughout has been that agency is far more distributed across complex systems than many theoretical approaches and actors may assume. Complex and wicked problems can appear overwhelming partially because they are the product of what seem to be very distant causes and conditions. Yet, as Bandura (2006) points out, human agency is ever-increasing, and we have unprecedented power to impact the conditions of life on earth. In many problem domains – including overpopulation, overconsumption, and climate change - threats are the direct result of our increasing agency. The undeniable footprint of humanity has led scientists to declare the next era "the Anthropocene" in acknowledgement of humans' long-term influence on the earth's geological processes. Our global interconnectedness is only growing and becoming more distributed.

Our agency has increasingly affected distant areas, often without our direct consent. Bandura points out, "proxy agency can be used in ways that promote self-development or impede the cultivation of personal competencies. In the latter case, part of the price of proxy agency is a vulnerable security that rests on the competence, power and favors of others." (2001, p. 13). We now find ourselves in a situation where systems to which people have given over proxy agency in return for the perception of competence and protection, are failing. Choices to trust external systems in order to gain a sense of security have caused incredible vulnerability in human and natural systems. One of the great opportunities (and necessities) presented by wicked problems may therefore be to reclaim the dissociated and proxy forms of agency originally harnessed by failing structures and institutions. By reclaiming agency given away by proxy, it can be recast into life-affirming and inclusive forms where humans begin to take responsibility for our ever-increasing ecological and social footprint. While this reclamation of agency may have system-wide effects, it undoubtedly originates with the self.

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Appendix A. Interview Protocol A

Interview Protocol A: Canadian Boreal Forest Agreement Participant

1. How long you have been/were you involved with the Boreal Forest Agreement process, and what is/was/ your role?
    a. Probe: What specific things did you do to advance the work? (in your own organization? Through collaboration? Other activities?)

2. From your perspective, how did the Agreement come to be? How did it unfold?
    a. Probe: What were the important events that occurred during the process?
    b. Probe: Were there some significant turning points, and if so, what were they?
    c. Probe: what were some of the conditions or the context for your sector or organization/company that were present?
    d. Probe: what were other conditions present? For example, in the marketplace? Politically?

3. Did you or your sector consciously draw on experiences elsewhere to advance the agreement?
    a. Probe: Did you draw from FSC-related work, Great Bear Rainforest, other sustainability initiatives you had been involved with?
    b. Probe: What did you do to translate these experiences to another context?

4. What was your organization/company trying to accomplish through this process? Your sector?
    a. Probe: What aspects were the most important to your organization to achieve?
    b. Probe: Was there any difference between what your organization/company was wanting and what others in your sector wanted? If so, can you give some examples?
    c. Probe: Did your company/organizational goals change throughout the process? If so, how were they revisited? What caused this?
    d. Probe: Did the events regarding the Boreal forest affect other aspects of your organization's/company's work?

5. What were some of the biggest challenges you faced getting to an agreement?
    a. Probe: How deal with that challenge?
    b. Probe: Where there specific political challenges? Challenges with First Nations? Economic challenges? Relationship challenges?

6. What do you think were the most important aspects of the process that enabled you to get to an agreement?
    a. Probe: What parts of the negotiation process were most helpful or generative?
    b. Probe: What else was critical to get the two sectors to an agreement?

7. What were the relationships like among individuals and sectors involved in the negotiations?
    a. Probe: How did you come together or interact?
    b. Probe: What were some of the challenges there?

8. Who were the most central individuals, from your perspective, in getting to an agreement?
    a. Probe: What was it that they did that was so central or important?

9. What was it like personally to go through the negotiations process?
    a. Probe: How did you think about your role?
    b. Probe: What was challenging about the role?
    c. Probe: What skills or capacities do you feel you needed most during the process?
    d. Probe: What did you personally learn?

10. What are the most important lessons that you learned through the process?

11. Has this experience affected how you approach your work now?
    a. Probe: What specifically has it changed? Personally? Organizationally?

12. Do you think this could be done elsewhere? If so, what advice would you give to people seeking to replicate your success?

13. Would you like to add anything else about the Canadian Boreal Forest Agreement process?

14. Conclude interview – Thank-you so much for your time. I will follow up with a copy of your transcript if you wish to review it.

15. **Other Emergent Questions (from interview process):**

16. How do you think about the Agreement now? Is it a success? what might you have done differently in hindsight?

    What does the CBFA need to look like moving forward, from your perspective and what concerns do you have about implementation?

17. What is working well (or what are the best things) about the Agreement?

18. What did it mean to have a 'good faith' negotiation to you?

19. Regarding good faith negotiations and groups abiding by the agreements, it has been noted that you didn't put in conflict resolution mechanisms, but that the senior players would get back together to work it out. How does this work when so many people have moved on? (e.g. Ken, Wayne, Avrim soon, Tzeporah)

20. How do you deal with succession more generally in such a long-term relationship?

21. (for ENGOs)
22. What was it like for the ENGO sector and for you personally to develop the economic aspect of the agreement, and to see yourself as advancing forest industry interests in the boreal?

Appendix B. Interview Protocol B

Interview Protocol B: Great Bear Rainforest Agreement Participant

1. How long you have been/were you involved with the Great Bear process, and what is/was/ your role?
    a. Probe: What specific things did you do to advance the work? (in your own organization? Through collaboration? Other activities?)

2. From your perspective, how did the Agreement come to be? How did it unfold?
    a. Probe: What were the important events that occurred during the process?
    b. Probe: Were there some significant turning points, and if so, what were they?
    c. Probe: what were some of the conditions or the context for your sector or organization/company that were present?
    d. Probe: what were other conditions present? For example, in the marketplace? Politically?

3. Did you or your sector consciously draw on experiences elsewhere to advance the agreement?
    a. Probe: Did you draw from FSC-related work, coastal conflicts, other sustainability initiatives you had been involved with?
    b. Probe: What did you do to translate these experiences to another context?

4. What was your organization/company trying to accomplish through this process? Your sector?
    a. Probe: What aspects were the most important to your organization to achieve?
    b. Probe: Was there any difference between what your organization/company was wanting and what others in your sector wanted? If so, can you give some examples?
    c. Probe: Did your company/organizational goals change throughout the process? If so, how were they revisited? What caused this?
    d. Probe: Did the events regarding the Great Bear Rainforest affect other aspects of your organization's/company's work?

5. What were some of the biggest challenges you faced getting to an agreement?
    a. Probe: How deal with that challenge?
    b. Probe: Where there specific political challenges? Challenges with First Nations? Economic challenges? Relationship challenges?

6. What do you think were the most important aspects of the process that enabled you to get to an agreement?
    a. Probe: What parts of the negotiation process were most helpful or generative?
    b. Probe: What else was critical to get the two sectors to an agreement?

7. What were the relationships like among individuals and sectors involved in the negotiations?
    a. Probe: How did you come together or interact?
    b. Probe: What were some of the challenges there?

8. Who were the most central individuals, from your perspective, in getting to an agreement?

    a. Probe: What was it that they did that was so central or important?

9. What was it like personally to go through the negotiations process?
    a. Probe: How did you think about your role?
    b. Probe: What was challenging about the role?
    c. Probe: What skills or capacities do you feel you needed most during the process?
    d. Probe: What did you personally learn?

10. What are the most important lessons that you learned through the process?

11. Has this experience affected how you approach your work now?
    a. Probe: What specifically has it changed? Personally? Organizationally?

12. Do you think this could be done elsewhere? If so, what advice would you give to people seeking to replicate your success?

13. Would you like to add anything else about the Great Bear Rainforest Agreement process?

Appendix C. List of Interviewees

Forest Industry:
Avrim Lazar, CEO, FPAC, Industry Caucus Lead
Wayne Clogg, Senior Vice President, Woodlands, West Fraser) (CBFA and GBRA)
François Dumoulin, Director, Forestry, Resolute Forest Products (formerly AbbitibiBowater)
John Dunford, Manager, Forestry and Environment, Tolko Industries Ltd.
Ken Higginbotham, VP, Forestry and Environment, Canfor (CBFA and GBRA)
Chris McDonnell, Manager, Environmental and Aboriginal Relations, Tembec

FPAC Staff:
Etienne Belanger, Director, Forestry, FPAC
Andrew DeVries, Chief Biologist, FPAC

ENGOs:
Tzeporah Berman, (formerly) ForestEthics, ENGO Caucus lead (2008-2010) (CBFA and GBRA)
Richard Brooks, Forest Campaign Coordinator, Greenpeace, ENGO Caucus lead) (CBFA and GBRA)
Amanda Carr, Campaigns Director, Canopy) (CBFA and GBRA)
Tim Gray, Program Director, Ivey Foundation
Bruce Lourie, President, Ivey Foundation
Steve Kallick, Director, International Wilderness Conservation, Pew Charitable Trusts
Aran O'Carroll, (formerly CPAWS), seconded to CBFAS, current Acting Director
Cathy Wilkinson, Canadian Boreal Initiative

CBFAS Representatives:
Andrew Bevan, Executive Director, Canadian Boreal Forest Secretariat (2011-2013)
Monte Hummell, Board Chair, Canadian Boreal Forest Secretariat (2011-2013)

Facilitators:
Dan Johnston, Mediator/Facilitator, Managing Partner, Pacific Resolutions Inc. (CBFA and GBRA)
David Eaves, ENGO Negotiations Advisor

Additional GBR participants interviewed:

Linda Coady, former VP MacMillan Bloedel
Merran Smith, former Campaign Director, ForestEthics
Jody Holmes, Science Director, Rainforest Solutions Project

Interviewed by co-author of Ch. 4:
Ross MacMillan, Tides Canada Foundation, CIII
Mike Lambert, John Bones, Integrated Land Management, Province of British Columbia

Appendix D. Agreement Signatories and Participants

CBFA Signatories

The Forest Products Association of Canada (FPAC) members today include Resolute Forest Products (formerly AbitibiBowater), Alberta-Pacific, AV Group, Canfor, Cariboo Pulp and Paper, Conifex, DMI, Fortress, Howe Sound, Kruger Inc., Louisiana Pacific, Mercer, Mill and Timber, Millar Western, Tembec, Tolko, West Fraser and Weyerhaeuser. Environmental organizations: Canadian Parks & Wilderness Society/Wildlands League, David Suzuki Foundation, The Nature Conservancy, Canadian Boreal Initiative, Ivey Foundation and Pew Environment Group International Boreal Campaign, ForestEthics, Canopy (Note: on April 17, 2013 Canopy formally withdrew from the CBFA), Greenpeace (Note: on December 6th, 2012, Greenpeace formally withdrew from the CBFA).

GBRA Participants:

Joint Solutions Project - ENGO and Forest Company participants:
BC Timber Sales
Catalyst Paper Corporation
Howe Sound Pulp and Paper
ForestEthics
Greenpeace
International Forest Products Limited
Sierra Club BC
Western Forest Products Inc.

Land Use Agreements: First Nations co-managing with the Province of British Columbia through Joint Land and Resources Forum: Nanwakolas Council, Coastal First Nations and Tsimshian Stewardship Committee directly representing 17 First Nations governments: Mamalilikulla-Qwe'Qwa'Sot'Em, Namgis, Tlowitsis, Da'naxda'xw Awaetlatla, Gwa'sala-'Nakwaxda'xw, Kwiakah, Comox, Homalco, Wuikinuxv, Gitga'at, Haisla, Heiltsuk, Kitasoo/Xaixais, Metlakatla, Gitxaala, Gitga'at, Kitselas and Kitsumkalum. The provincial government also has agreements and undertakings with additional First Nations governments that are not part of the Joint LRF.