

Constructing climate capitalism: Corporate power and
the global climate policy-planning network

by

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Supervisory Committee

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Abstract

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Climate capitalism has emerged over the last two decades as the response of a section of the global elite to the crisis of global warming. Greater consciousness of threats to the stability of the global carbon cycle, and thus to the general conditions for capital accumulation, has led certain members of the global elite to design a project of climate capitalism, that holds the promise of a smooth transition out of the crisis and into a new era of accumulation on renewed, ecologically modernized foundations. However, climate capitalism has been contested from the start. For one, many still do not accept that there exists any problem that needs addressing in the first place. At the other end of the spectrum, climate capitalism is challenged on the grounds of its incapacity to reduce GHG emissions and its complicity with neoliberalism in entrenching existing inequality. Debates abound around the latter critique. Should climate capitalism be opposed by all means, or should it be cautiously supported, for want of an alternative that can be realized rapidly enough? The response to this question crucially depends on whether support exists among the corporate and other global elites for a climate capitalism that stands a chance of actually reducing climate impacts in a timely manner. This dissertation directly addresses the issue of the existence and extent of corporate elite support for climate capitalism. It asks specifically, *what forces support climate capitalism, how and to what degree they are organized, and how powerful they are relative to the forces of the status quo.*

This study answers the question of the potential of the climate capitalist project to become entrenched at the core of the neoliberal hegemonic bloc with a qualified yes: although broad support has not yet emerged, it seems poised to develop in the future as the global ecological crisis deepens – perhaps as an outcome of the 2015 Paris Climate Conference. As to the question of the content of climate capitalism, and thereupon the issue of whether climate capitalism can actually provide a reduction in GHG emissions, the study finds that the dominant view of climate capitalism is that of a weak ecological modernization, taking place over the long term. In view of the scientific consensus on the urgency of massive GHG emissions reductions in the near term, this confirms the argument put forth by critics that a realistic response to climate change cannot be founded on climate capitalist principles.

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List of Abbreviations

| | |
|--------|--|
| BCSD | Business Council for Sustainable Development |
| BCSE | Business Council for Sustainable Energy |
| BELC | Business and Environment Leadership Council of the C2ES |
| BP | British Petroleum |
| C2ES | Center for Climate and Energy Solutions |
| CCC | Copenhagen Climate Council |
| CDM | Clean Development Mechanism |
| CEO | Chief executive officer |
| CEPG | Climate and Environmental Policy Group |
| COP | Conference of Parties to the UN Framework Convention on Climate Change |
| CSR | Corporate Social Responsibility |
| e5 | European Business Council for Sustainable Energy |
| EU | European Union |
| EU ETS | European Union Emissions Trading Scheme |
| GCC | Global Climate Coalition |
| GCF | Global Climate Forum |
| GEMI | Global Environmental Management Initiative |
| GHG | Greenhouse gas |
| ICC | International Chamber of Commerce |
| ICCP | International Climate Change Partnership |
| IETA | International Emissions Trading Association |
| IGO | Intergovernmental organization |
| IMF | International Monetary Fund |
| IPCC | Inter-governmental Panel on Climate Change |
| IPIECA | International Petroleum Industry Environmental Conservation Association |
| IUCN | International Union for the Conservation of Nature and Natural Resources |
| JI | Joint Implementation |
| KPM | Knowledge production and mobilization |
| LBST | Ludwig Bölkow Systemtechnik GmbH |
| LED | Light-emitting diode |
| NGO | Non-governmental organization |
| OECD | Organization for Economic Cooperation and Development |
| TNC | Transnational corporation |
| UIA | Union of International Associations |
| UNCED | United Nations Conference on the Environment and Development |
| UNCHE | United Nations Conference on the Human Environment |
| UNCSD | United Nations Conference on Sustainable Development |
| UNCTAD | UN Conference on Trade and Development |
| UNEP | United Nations Environment Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WBCSD | World Business Council for Sustainable Development |
| WCED | World Commission on Environment and Development |
| WICE | World Industry Council for the Environment |
| WSSD | World Summit on Sustainable Development |
| YBIO | Yearbook of International Organizations |

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Dedication

I wish to dedicate this work to two people. First, to Ken Hatt (1937-2012), whose mix of deep concern and great hope for the future I share. Second, to my son Alder Émile, who will grow up to see a world very different than the one we live in today.

Chapter 1. Introduction

Climate change and industrial capitalism

It is generally recognized today that humanity is undergoing an ecological crisis. Under the industrial capitalist mode of production that emerged in the eighteenth century, and especially with its latest developments since the mid-twentieth century, the relationship between humans and their environment has become highly problematic (Commoner 1974; Daly 1999; Magdoff and Foster 2011; O'Connor 1998; Schnaiberg 1980). The crisis is such that the impacts of industrial activity now threatens the earth's main biogeochemical cycles that support human and other life (Rockström et al. 2009; Smith et al. 2014). Of these, the global carbon cycle on which depends the stability of the climate system has been one of the most severely disrupted (Falkowski et al. 2000; Le Quéré et al. 2013; Rockström et al. 2009). The physical causes of the phenomenon of global warming – the tremendous increase in the atmospheric concentration of carbon dioxide (CO₂) and other greenhouse gases (GHGs) ensuing from the burning of fossil fuels and other processes of industrial production – have been documented for well over a century (Girvan 2014; Weart 2008). Similarly, the disruption of climatic phenomena and the increase of sea level resulting from global warming are well recognized (IPCC 2014b). Climate change, like other instances of global environmental degradation, is thus known to be the consequence of the new way in which humans relate to their environment since the mid-eighteenth century, that is, the industrial capitalist mode of production (Altvater 2007, 2011; Clark and York 2005).

Under industrial capitalism, the amount of surplus value extracted from workers is maximized by substituting constant capital – machines – for variable capital – labour power, thereby increasing the productivity of labour (Marx 1976 [1867]). In other words, capitalists seek to increase their profits and thwart competition by keeping the number of workers to a minimum and instead relying on increasingly more efficient technologies of production. These technologies of production, machines that enable production of a greater quantity of commodities per worker, require energy to function, which, since the generalized adoption of the steam engine in production, has mainly been provided by

fossil fuels (see Hall and Klitgaard 2012; Hall and Ramírez-Pascualli 2013; Huber 2009; Mitchell 2011; Nikiforuk 2012). As Marx noted a long time ago (Marx 1976 [1867]), the sources of value are on the one hand human labour, and on the other hand the land, the territory on which humans live. It is the land that provides humans with energy in the form of direct solar radiation, flora and fauna, water, wind, and fossil and nuclear fuels (Hall and Klitgaard 2012).

Many scholars have recently provided detailed accounts of why, despite the fact that the process of global warming and its human causes are well understood, it appears so difficult to reduce climate change inducing greenhouse gas emissions. A great amount of scholarship points to the flawed process of negotiating an international agreement to reduce GHG emissions and the incapacity of finding a common ground, on the one hand between the United States and Europe, and on the other hand between countries of the capitalist core and those of the periphery (e.g. Bond et al. 2012; Depledge 2008; Hurrell and Sengupta 2012; Oberthür and Ott 1999; Roberts 2011; Szarka 2012). The determinants of national negotiating positions, and especially the capacity of large corporations and elites to influence climate debates, have been widely investigated. Numerous researchers have given sizeable attention to the climate change denial movement that, funded by powerful conservative corporate actors, has stalled climate policy in the United States and elsewhere since at least the early 1990s (e.g. Brulle 2013; Derber 2010; Dunlap and Jacques 2013; Fisher et al. 2012; Jacques et al. 2008; McCright and Dunlap 2003; Young and Coutinho 2013). Others have looked at the different ways the corporate sector exerts power over policy-makers and climate negotiators. Researchers have thus emphasized on the one hand processes of lobbying, coalition building and consensus-making among large corporations (e.g. Brown 2000; Downie 2014; Kolk and Pinkse 2007; Levy 1997; Levy and Egan 1998; Levy and Kelley 1997; Markussen and Svendsen 2005; Meckling 2011; Paterson et al. 2014; Skjaerseth and Skodvin 2003; Vormedal 2008). On the other hand, they have shed light on the structural power of capital to determine national and international regulation (e.g. Derber 2010; Jones and Levy 2007; Matthews and Paterson 2005; M'Gonigle and Takeda 2013; Newell and Paterson 1998, 2010; Paterson 2001, 2009, 2010), and to shape the very

categories and narratives through which the problem and its solutions are defined (e.g. Levy and Spicer 2013; Liverman 2009; Wright and Nyberg 2014; see also Bernstein 2002). Finally, scholars also argue that the industrial capitalist mode of production itself, because it relies heavily on fossil fuels to generate surplus value and sustain economic growth, is the ultimate determining factor of the failure to reduce global GHG emissions (e.g. Angus 2008; Bitter 2011; Brunnengräber 2009; Clark and York 2005; Foster et al. 2009; M’Gonigle and Takeda 2013). Thus, despite the multiple theoretical interpretations of the relation between capital and climate change, there is widespread agreement that large corporations, the main actors of today’s capitalism, have played and continue to play a crucial role both in the exponential increase in GHG emissions and in impeding political processes that seek to address the problem.

The climate capitalist debate

This relative consensus about the ultimate political economic causes of climate change starts breaking down when it comes to assessing what the power of corporations and capital effectively means for climate policy and for proposals to reduce GHG emissions. A sizeable literature argues that because they play such an important role in causing the problem, large corporations can and must also contribute in a major way to its solution. (see e.g. Kolk and van Tulder 2010; Lovins 2010; Lovins and Cohen 2011; Pinkse and Kolk 2009, 2012; Scherer and Palazzo 2011; Warhurst 2005). These authors argue that it is possible to bring the interests of a large section of capital in line with climate protection under a “climate capitalist” regime of production. Climate capitalism would involve reorganizing the whole capitalist economy around a new energy regime based on renewable electricity generation, improved energy efficiency in production and other processes, and the phasing out of fossil fuels (Lovins 2010; Lovins and Cohen 2011; Newell and Paterson 2010). The transition to climate capitalism would be spurred by assigning a price to GHG emissions, through the trade of emissions allowances or by means of a more straightforward carbon tax (see Nell et al. 2011), either of which would provide the impetus for corporations to adopt less GHG intensive production technologies, and make renewable electricity more competitive against fossil fuel energy (Newell and Paterson 2010). More importantly perhaps, Newell and Paterson (2010;

Paterson and Newell 2012) argue that carbon markets are crucial in mobilizing a large section of capital around the project of climate capitalism. On the one hand, vast numbers of scholars support climate capitalist policy options enthusiastically and work to develop various technical analyses to improve the functioning of carbon markets or assess the best level to set a carbon tax (e.g. Braun 2009; Grubb 2012; Wood and Jotzo 2011; Wu et al. 2014).

On the other hand though, several critical scholars have also come to give their support to carbon markets and climate capitalism, albeit reluctantly. They justify this position by observing that the climate capitalist proposal represents the only option on the table that (a) stands a chance of getting the wide corporate and state support needed for a rapid transition and reduction of GHG emissions, and (b) rests on trading relations that have already become well established, as carbon markets are being rapidly developed worldwide (Bernstein et al. 2010; Betsill and Hoffmann 2011), and foster interest from certain sections of capital (Newell and Paterson 2010). They thus urge others to rally behind this option, which they believe is the only viable trajectory given the current state of political economic relations and the imminence of climate catastrophe (Hahnel 2012a, 2012b; Newell and Paterson 2010; Paterson and Newell 2012).

The emergence of this latter position among critical scholars shortly after the failure of the 2009 Copenhagen Climate Summit brought forth strong rebuttals from other critics of carbon markets. According to these latter voices, carbon markets and carbon taxes do not actually reduce GHG emissions but only function as a mechanism to transfer wealth to corporations by dispossessing women, smallholders and indigenous peoples of their access to the land, while entrenching fossil fuel-based capital accumulation (see inter alia Bond 2012; Goodman 2009; Isla 2009; Lohmann 2006, 2008a, 2008b, 2008c, 2012b; M'Gonigle and Takeda 2013; Salleh 2010). Hence, they should be rejected and actively opposed (Bond 2013; Lohmann 2011, 2012a). Thus and so, the debate around climate capitalism profoundly divides the community of critical scholars.

This debate is the primary impulse driving this dissertation. As I just explained, the debate coalesces around three main issues. The first one, whether climate capitalism

would actually reduce GHG emissions enough to avoid catastrophic climate change, is partly an empirical issue, but is laden with uncertainty. The capacity of climate capitalism to effectively reduce emissions first depends on what are the actual effects of carbon markets, the main climate capitalist policy instrument. This eventuality itself crucially depends on renewable energy's capacity to effectively displace fossil fuels as a source of energy, and not simply add to the existing supply. Recent large scale analyses suggest this is not the case (Li 2009; York 2012), although this issue is far from settled (e.g., see Harvey 2013; Rosenbloom and Meadowcroft 2014; Sims 2014). However, over the long term, it appears unlikely that renewable energy alone can fulfil the constantly growing need for energy associated with the intrinsic necessity of exponential growth that is characteristic of capitalism (Jackson 2011; see also Hall et al. 2014; Smith 2010; M'Gonigle and Takeda 2013). Whether climate capitalism can reduce global warming in a timely fashion also depends on whether it has for its actual goal to replace fossil fuel use in the short- to medium-term. Here again, a handful of critical authors have also suggested it may not be the case (Derber 2010; Jones and Levy 2007; Lohmann 2006, 2008a, 2012a).

The second issue relates to the level of support climate capitalism receives from corporate and other elites. The argument Newell and Paterson develop in support of climate capitalism rests on their assessment that a climate capitalist coalition, in the sense of a broad ranging alliance between social forces from multiple sectors – including large parts of capital –, has formed and is in a position to take the lead on a transition away from the fossil fuel economy, provided they get support from a large enough section of civil society (Newell and Paterson 2010; see also Hahnel 2012a). To this, Lohmann (2011, 2012a) retorts that no such coalition exists at the moment, nor is even possible given the opposite goals capital and the climate movement have for carbon markets – with capital interested in accumulation and growth, and the climate movement interested in a real and rapid reduction of GHG emissions. In his response to Hahnel (2012a) who makes a similar argument, Bond (2013:54) goes further to add that if there is unity of purpose to be found, it is rather in the Left's rejection of carbon trading.

The third determinant issue in the climate capitalism debate is an ethical one. It involves weighing the uncertain mitigation of the effects of climate change by climate capitalism against the known impacts of climate capitalism on women, small peasants, and indigenous peoples referred to above¹.

This dissertation directly addresses the second issue, the existence and extent of corporate elite support for climate capitalism. It asks: *what forces support climate capitalism, how and to what degree they are organized, and how powerful they are relative to the forces of the status quo*. In the context of the climate capitalist debate, these are key questions, that empirical investigation can illuminate to some extent. This study will not address the first issue, i.e. the effectiveness of climate capitalism to reduce GHG emissions, except tangentially. However, it is my hope that a better empirical knowledge of the potential for climate capitalism to eventually emerge out of the current social struggles will shed some light on the last issue outlined, the ethical decision to pragmatically support climate capitalism given the urgency of the climatic situation, or to oppose it on the grounds of the injustice it brings forth.

The question of climate capitalism as a strategy to address climate change is crucial in the discourse that circulates in climate politics, especially as interest in the issue is increasing once again, following the publication in 2014 of the International Panel on Climate Change's (IPCC) fifth assessment report (IPCC 2014a, 2014b, 2014c) and the preparations for the December 2015 Paris Climate Conference. Most of the climate politics literature presents the whole debate as taking place between on one side those who deny either that climate change is happening or that anything can be done about it, and on the other side those who understand that something must be done, this something being a transition to a climate capitalist regime. Thus, in this simple dichotomous account, any debates about what is to be done are obfuscated, and the "solution" of climate capitalism is presented as consensual, even though it might not actually address the issues at all, or is at the very least heavily contested. My goal in this dissertation is thus first to highlight these debates and second, to assess on the basis of empirical data whether there exists an organizational base for supporters of the climate capitalist option

¹ These impacts are discussed more at length in Chapter 2 (pages 33-36).

to lead a profound change in the foundations of capitalist accumulation, that would allow a real reduction of the risk posed by the climate crisis while preserving the capitalist mode of production and the social order that it entails.

Concepts

The capitalist mode of production

Two main concepts, to which I referred briefly above, form the general framework for the analysis I present in this work. The first one, that of *mode of production*, comes from critical political economy, and especially from the work of Marx (1938 [1846], 1976 [1867]). In its general sense, the concept of mode of production bridges between humans and nature by focusing on the arrangements through which members of a given society appropriate from nature what they need for their survival and reproduction (Benton 2000). Each given mode of production thus entails two interrelated aspects. On the one hand, it is constituted by a set of economic relationships, the particular extractive practices by which humans produce their subsistence from nature. On the other hand, it is also the set of political relationships that constitute the mechanisms of discussion, deliberation, compromise and constraint by which decisions are made as to how to conduct extractive activities. Economic and political relations hence constitute two sides of the same coin, deeply intertwined into existing and imagined modes of production (see Jessop 1990, 2002).

The industrial capitalist mode of production that is our main interest here is based on the circulation of capital and its reproduction on an extended scale. Capital circulates according to the cycle famously analyzed by Marx (1976 [1867], 1978 [1885]), where money capital (M) is used to purchase commodified means of production (C) – raw materials, tools and labour power – used in the production process (P) to produce commodities (C') that are then sold on a competitive market for a profit (M'). This is summarized formulaically by Marx as $M-C...P...C'-M'$. The first moment of the cycle (M–C) involves the transformation of an initial amount of money capital into a certain set of commodities: tools and machines, raw materials, including the energy required to run the machines, and the labour power of workers, all bought as commodities on the market.

The second moment, the moment of production (C...P...C'), is the crux of the cycle, where the labour power of workers is used under the direction of capitalists to transform raw materials into marketable commodities. As workers produce more than the value of their labour for which they are paid, the process generates a surplus value, which is appropriated by capitalists. The last moment of the cycle (C'–M') involves retransforming commodity capital into money capital by selling the product on the market, thus realizing its embodied surplus value. The reproduction of capital is assured by re-cycling the increased amount of capital (M') into the process. Such a description provides a clear conceptualization of the fundamental relationship between humans and nature as the appropriation and transformation of nature by humans through the production process (Foster 2000).

The three moments defined in this cycle define three types of capital: financial capital, productive capital and merchant capital, each with their own interests that enter into contradictions in various ways (Marx 1978 [1885]; van der Pijl 1998). For our case, the relation between productive and financial capital is determinant of the relationship between humans and nature under capitalism. Constant competition between individual capitals pressures capitalists into constantly innovating to increase the productivity of each worker, by both reorganizing the labour process and implementing more productive technologies (Marx 1976 [1867]). Financing this expansion on a constantly growing scale was much facilitated during the mid-nineteenth century in two ways: first, the joint-stock company form was generalized, aggregating accumulated profits from multiple capitalists in the form of shareholdings representing a right on future profits. Second, banks also played a crucial role in aggregating savings from individual capitalists, and eventually workers as well, and investing them into large scale productive projects, including shareholding in joint-stock companies (Carroll 1986; Roy 1997). As money capital is returned into production in the form of loans, with the capacity to repay interest resting on future profits, the reproduction of capital is required to take place on a constantly expanded scale (van Griethuysen 2010; Harvey 1999). The latter constitutes a defining characteristic of the industrial capitalist mode of production, determined by the

relationship between productive and financial capital at the core of capitalist reproduction.

We can draw two conclusions from the above account: first, the stable reproduction of capitalism requires continuous expansion. Such expansion in turn depletes natural resources and increases pressure on nature's capacity to re-cycle waste products on a constantly expanding scale, unless new technologies with a lower impact per unit produced are implemented². Notwithstanding the resort to such technologies, some argue that capitalism eventually exhausts the resource base on which it depends (O'Connor 1998; Schnaiberg 1980). Said otherwise, capitalism creates a constantly expanding *metabolic rift*, as it extracts matter from one place, removing it from natural cycles, transforms it through the process of production, and eventually rejects it in a degraded form in another place, where it has harmful consequence, thus disrupting natural biogeochemical cycles (Clark and York 2005; Foster 1999)³. The second conclusion we can draw from Marx and others' account of industrial capitalism as a mode of production is thus that both productive capital and financial capital are deeply implied in the process of expanded reproduction that deepens the metabolic rift. Historically, the codependency between these two aspects of capital prompted their merger into *finance capital* (Carroll 1986), in the form of complex systems of relationships between banks and industrial corporations (Hilferding 1981 [1910]; Mintz and Schwartz 1985), and in the form of the joint-stock company itself (Baran and Sweezy 1966). In consequence, linking back to the political aspect of the industrial capitalist mode of production, the organizations of finance capital – large corporations and banks – and by extension the individuals controlling them, exert a great deal of power on the general orientation of industrial capitalism, and hence on the relationship between humans and nature.

² Even then, as per the second law of thermodynamics, technological efficiency of a given production process eventually reaches physical limits beyond which it cannot be made more efficient (Georgescu-Roegen 1971; Henshaw 1978).

³ Foster's (1999) theory of the metabolic rift draws on Marx's observations about the transformations affecting agriculture in the mid-nineteenth century. Marx himself drew from German chemist Justus von Liebig's work on soil nutrients to develop an understanding of how capitalist agriculture depletes soil fertility and as a consequence has to import outside nutrients to maintain its conditions of production. Clark and York (2005) expand Foster's concept to the carbon cycle, arguing that the fossil fuel-dependent capitalist process of production creates an ever expanding "carbon rift" by removing matter – coal, oil, gas – from one place where it is harmless and rejecting it in a transformed form – carbon dioxide and other GHGs – in another place where it has detrimental effects.

In sum, the concept of a mode of production, and an understanding of the basic workings of industrial capitalism as the dominant way in which humans have been appropriating nature since at least the mid-nineteenth century, is key to appreciating the socio-economic origins of climate change. As I explained above, a mode of production comprises an economic aspect and a political aspect. As much as the economic process behind climate change is well understood, knowledge of the political relations regulating it is crucially underdeveloped⁴. I seek in my work to provide a better view of the organization of the existing political relations linking the actors of the field of climate politics and to understand their struggles to maintain and to transform the field.

Territory and politics

The second major concept informing this work, this one borrowed from political ecology, is that of *territory*. In contrast to Marx's abstract description of modes of production, territory designates the concrete *place* where modes of production exist, and from which the resources humans use to produce the necessities of life are extracted (Lipietz 2012; M'Gonigle 2000, 2002). A notion of territory highlights the concrete aspects of modes of production and their constitutive relations, often described in the abstract. It is, for one, much richer than the more widely used concept of "environment", as the latter embodies in its meaning the separation of humans from nature at the core of the human exemptionalism paradigm which many environmental scholars seek to transcend (e.g. Benton 2000; Catton and Dunlap 1978, 1980; Dunlap and Catton 1994; Lipietz 2012; Schaeffer 2007). Secondly, it captures more fully certain political aspects of the relation between humans and nature, which Marxist analysis only addresses indirectly, as political activity is mainly about regulating economic activity *that takes place within a given territory*.

The territory of industrial capitalism now covers the whole planet (M'Gonigle 2002): economically, complex chains of commodity production link multiple localities thousands of miles apart (Lawson 2009, 2011), and politically, the institutions of what some now call "global governance" – core capitalist states, the UN system, and the largest corporations and their organizations – form the architecture of what Robinson

⁴ Although see M'Gonigle and Takeda (2013).

(2004) describes as a “transnational state apparatus”. Just as production and governance are now global, the effects of industrial capitalism cover the whole planet as well, the most obvious example being of course climate change.

The consequences of climate change also directly affect the territory: rising sea level, droughts and desertification, and more frequent and stronger hurricanes and cyclones all cause loss of territory. Climate change therefore directly affects those dependent on the land for their subsistence, but threatens centralized political-economic institutions as well, as the flows that maintain their hierarchical organization, i.e. the energy, resources and labour power used in capitalist production, are disrupted (M’Gonigle and Takeda 2013). A major consequence of capitalist expansion is thus the disruption of capitalist accumulation and of its expansion (O’Connor 1998).

As their maintenance becomes threatened, centralized political-economic institutions react to uphold the flows that support them, by modifying the existing regulation of economic activity, and thus the relationship with the territory. This political reorganization of economic relations implies a reorganization of political relations, as they are depend in great part on economic relations. Thus, struggles take place among many constituencies. The outcome of these struggles are determined partly by previously existing power relations, and partly by the capacity to mobilize support. Support is mobilized by constructing a project that appeals to the largest number of economic interests and that also can gather sufficient legitimacy outside the central hierarchy of power (Jessop 1990). This struggle for the reorganization of the industrial capitalist mode of production in the face of climate change, in both its economic and political aspects, is the main theme of this dissertation.

Outline

The dissertation is divided into six chapters. In chapter two, I look briefly at the evolution of the field of climate politics since the 1970s to the present, with a focus on its close relationship with the neoliberal regime leading to the rise of the project of climate capitalism. I describe how neoliberalism leads to the commodification of various parts of nature, including the atmosphere, and lay out some of the effects this commodification

has on human beings in different regions of the world. I also discuss the relationship between climate capitalism and other competing projects present in the field of climate politics.

In the third chapter I introduce the climate and environmental policy-planning groups (CEPGs) on which the empirical analysis laid out in chapters four and five is based. These groups are corporate funded and controlled organizations whose task is on the one hand to develop the ideas constitutive of climate capitalism, and on the other hand to bring the global corporate community and other elite constituencies together in support of the project. I use these groups as an entry point to study the discourse and network of organizations and individuals who have an interest in climate capitalism as a project to address the threat of global warming. In this chapter, I discuss in depth each group's activities and discourse, and draw out the common narrative of climate capitalism they participate in constructing, as well as the set of complementary practices they use to promote the project.

In chapters four and five, I present a social network analysis of the organizations and individuals present in the field of climate politics. In chapter four, I look at the network of corporations represented on the boards of directors of CEPGs. I describe the regions and economic sectors represented on CEPG boards, so as to assess the reach of the climate capitalist project they develop. I look at the particular role that energy and financial corporations play in this network. I finally consider the network of corporations linked to CEPGs in the broader network formed by the interlocking boards of the largest corporations, to determine where the climate capitalist project stands in relation to the global corporate elite. In chapter five, I seek to answer the question of the extent of the reach of climate capitalism, this time among International Governmental Organizations (IGOs) and other organizations active in global politics.

I present concluding thoughts in chapter six.

Chapter 2. Climate capitalism, carbon trading, and the field of climate politics

The field of climate politics, like any other social field, is constituted through relations of power, as multiple groups are engaged in a struggle to influence the climate policy debates at the national and transnational level (see Bourdieu 1991). Among these actors, members of the corporate elite are major players who can exert economic power through their investment decisions, as well as political and cultural power by strategically coordinating and taking the lead in devising policies to address global warming (see Carroll 2004). Thus, at the level of political-economic structures, the exercise of corporate power in the field of climate politics bears the weight of the institutional arrangements and ideologies constitutive of the neoliberal regime. At the level of individual relationships, climate politics result from the decisions of a variety of individuals – elites from the corporate, political, academic and non-governmental realms as well as grassroots organizers and members of the general public – who are embedded within organizations and networks of relationships that enable and constrain their actions. Hence, climate politics constitute a complex field of social relations that must be analyzed at these different levels, individual, organizational and structural, simultaneously (Bhaskar 1998; Hatt 2009, 2013).

In this chapter I will, on the basis of the climate politics literature, describe the project of climate capitalism and develop an account of its emergence within the context of neoliberalism. I will emphasize the crucial historical role played by individual members of the corporate elite and their organizations in the construction and diffusion of climate capitalism, and I will as well consider the role of certain international governmental organizations (IGOs) and NGOs in the hegemonic struggle traversing the field of climate politics.

The chapter starts by tracing back the roots of climate capitalism to the early environmental debates of the 1970s and the emerging awareness of the incompatibility between the preservation of the environment on the one hand, and the unfettered pursuit of economic growth on the other. It then looks at one of the foundational mechanisms of

climate capitalism – carbon trading – describes its goal and functioning, and reviews the critiques levelled against it. Finally, it discusses climate capitalism as a hegemonic project, discusses corporate power and its relation to hegemonic projects, and explores the relations between climate capitalism and competing projects delineated in the climate politics literature.

The rise of climate capitalism

In this first section I look chronologically at how the project of green capitalism emerged out of the nascent neoliberal regime in the 1980s and early 1990s. I am particularly interested in tracing the origins of the climate capitalist project, its tight linkages with green capitalism and the underlying neoliberal regime, as well as in the sustained involvement of IGOs, NGOs and large corporations, through the work of individual elites from each sector.

The 1970s and 1980s: in search of a compromise

Corporate organizations and individual capitalists have long been involved in the elaboration of political responses to global environmental issues, especially in the case of climate change. Environmental degradation started drawing greater media attention in the 1970s. The environmental movement was starting to gain traction and ministries of the environment were created in many countries, partly in response to popular pressure (Hajer 1995). Awareness was growing of a tension between economic growth and environmental protection (Hajer 1995). This is evidenced in multiple publications that became foundational for the discussions in the decades that followed. Two crucial texts, the *Limits to Growth* report (Meadows et al. 1972) and *Blueprint for Survival* (The Ecologist 1972), emphasized – the first from the vantage point of complex systems analysis, the second from a grassroots social movements' perspective – the incompatibility between infinite economic growth and the long term reversal of environmental destruction. Similarly, many scholars writing in the 1970s pointed out the problems posed by the finite nature of the planet's resources for an economy founded on the premise of infinite exponential growth (e.g. Daly 1973; Georgescu-Roegen 1971; Odum 2007 [1971]). A small number of more radical thinkers were beginning to make

the link between environmental destruction and capitalist relations of production (e.g. Bookchin 1971; Commoner 1974). In the same vein, the first international conference to address global environmental issues, the UN Conference on the Human Environment (UNCHE) that took place in Stockholm in 1972, also presented in its final declaration (UNEP 1972) environmental politics as a necessary choice between the two options, environmental protection on the one hand and unfettered economic growth on the other (Bernstein 2000:470).

At the same time, the crisis of the Fordist model of accumulation based on the social compromise between labour and capital and on Keynesian redistributive policies was developing into a major threat to corporate profit levels (see Harvey 2005, 2011; Lipietz 1992). Certain members of the corporate community were starting to perceive a threat to long-term economic growth and were starting to organize politically to transform the regime of accumulation, in the hope of restoring profit levels (Carroll 2010). The organized segment of the corporate elite was starting to adopt the free-market ideology that would become the mainstay of neoliberalism, which emphasized transforming the state to facilitate international trade and open up new avenues for economic growth (Harvey 2005; Mirowski and Plehwe 2009). This was in direct contradiction with the emerging consciousness of environmental limits to growth. As I will explain, the project of green capitalism was developed by members of the corporate elite specifically in response to such debates that were questioning the foundations of capital accumulation and suggesting various post-capitalist alternatives to the unfolding crisis (Carruthers 2001).

Beginning in the late 1970s, both the debate about economic growth and national-level environmental policy were recast according to neoliberal principles. As I will explain in more detail in the next section (see page 28), the neoliberal regime was established in the 1980s to support a faltering economic growth by repelling state regulation of markets (Harvey 2005). This regime emerged along with a greater involvement of the corporate elite in politics, both nationally and transnationally (Carroll 2010; Useem 1979, 1984). In the case of environmental politics, sections of the corporate elite started to move beyond a reactive or oppositional stance to environmental regulation, and instead adopted more

active strategies to shape these regulations (Bernstein 2002; Gleckman 1995). Thus, some corporations, business associations, and international trade organizations started to become more involved in environmental politics. Bernstein (2000, 2002) considers the 1984 OECD International Conference on Environment and Economics to be a foundational moment of the discursive reconciliation of environmental protection and economic growth. The Organization for Economic Co-operation and Development (OECD) is an IGO dedicated to the promotion of economic growth through trade liberalization, and the goal of the 1984 conference was thus to convince participants, and especially the ministers of the environment of member countries, to adopt the view that “environment and economy can be mutually reinforcing” (Bernstein 2000:496). One of the main organizers of the conference and promoters of this idea was Jim MacNeil, the environmental director of the OECD. MacNeil later became the secretary general of the World Commission on Environment and Development (WCED), that would in 1987 publish the famous Brundtland report, the foundational text of sustainable development. Elaborating on the ideas presented at the 1984 OECD conference, this report establishes economic growth as a fundamental policy imperative alongside environmental protection and social equity (WCED 1987; see below), and thus re-frames the environmental debate in a way that defuses the tension that built up in the 1970s (Carruthers 2001; Chatterjee and Finger 1994).

This move toward a “compromise” between environmental protection and economic growth is illustrated in the evolution of the use of the concept of “sustainable development” in successive landmark publications. According to Hopwood et al. (2005), the expression first appeared in a 1980 report authored by the International Union for the Conservation of Nature and Natural Resources (IUCN) and sponsored by the UN Environment Program (UNEP). The report explains that “[f]or development to be sustainable, it must take account of social and ecological factors, as well as economic ones; of the living and the non-living resources base; and of the long term as well as the short term advantages and disadvantages of alternative decisions” (IUCN 1980: section 1). Still echoing the warnings of the *Limits to Growth* report against an untamed growth of the economy, this definition nevertheless makes the move to frame the debate around a

conception of “development” understood as a general good. Moving still further in that direction, the Brundtland Report later defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987:43). This definition, that would dominate the discourse for decades to come, set preservation of the environment, social equity and economic growth as three equally important facets of sustainable development. Thus defined, the concept effectuates a rhetorical mediation (see Meyer 1993) between environmental protection and economic growth, framing sustainable development as a necessary compromise for the common good (Bernstein 2002; Brand 2012; Gendron 2006), and by the same token opens the door to a subsequent interpretation that makes the latter a prerequisite for the former (Carruthers 2001; Dryzek 2013).

The discourse of ecological modernization is another fundamental element of green capitalism. It builds on the same bases as sustainable development, and develops further the idea of a compatibility between environmental protection and economic growth by asserting that environmental protection can be economically profitable (M’Gonigle and Takeda 2013). According to Fisher and Freudenberg (2001:702), ecological modernization first appeared in the German academic literature in an article by Huber (1985), and a few years later made its way into English with Spaargaren and Mol (1992). Like other theories in environmental sociology such as the “treadmill of production” (Gould et al. 2004; Schnaiberg 1980) and the “metabolic rift” (Foster 1999, 2000), ecological modernization locates the source of environmental destruction in political economic structures (Dryzek 2013; Mol and Spaargaren 2002). However, unlike the treadmill of production and the metabolic rift, it assumes that it is possible for the existing institutions of capitalism to internalize the costs of environmental protection without undergoing any radical changes in their mode of functioning (Hajer 1995:25–26; Dryzek 2013; M’Gonigle and Takeda 2013). In its practical and prescriptive aspects, ecological modernization is founded on the keystone idea that improving energy efficiency in commodity production benefits both the economy and the environment. For its proponents, this benefits financially businesses that can reduce their inputs costs, and

at the same time it helps reduce the pressure on natural resources and ecosystems (Mol 2002; Spaargaren and Mol 1992)⁵. Another major aspect of ecological modernization as a practice is the reliance on market mechanisms to provide a way to make protecting the environment into a mechanism of capital accumulation (see Spaargaren and Mol 2013), on which I will elaborate further below. Because it brings the reconciliation of economy and environment directly into capitalist practice, ecological modernization has developed great traction among the environmentally minded section of the corporate community and business scholars (e.g. Hawken et al. 1999; Lovins 2010; Lovins and Cohen 2011). It thus can be thought of as the prescriptive side of sustainable development and of green capitalism, elaborating on the practical means to achieve the goal of subordinating environmental protection to economic growth.

In sum, during the 1980s, a small number of individuals linked to the corporate community, IGOs, NGOs, and academia together redefined concepts and elaborated a discourse that addressed the radical critique carried by the environmental movement that had emerged in the late 1960s. The concept of sustainable development and the related programme of ecological modernization that they constructed helped move the discourse about environmental politics from its original focus on the opposition between economic growth and environmental protection to emphasizing instead their compatibility under certain political and economic conditions, hence creating the foundations of the green capitalist project.

The 1990s: sustained involvement of the corporate elite

The two main events that contributed to the formation of global environmental politics during the 1990s were the United Nations Conference on the Environment and Development (UNCED) – commonly referred to as the Rio Summit – that took place in 1992, and the signing of the Kyoto Protocol in 1997. The UNCED provided the first major opportunity for the transnational corporate elite to organize around environmental

⁵ This argument has been amply critiqued on the basis of the Jevons Paradox, according to which the lower input costs per unit produced resulting from the use of more energy-efficient technologies allows producers to sell their commodities more cheaply, which results in increased demand, thus in most cases negating the gains in throughput of matter and energy (see inter alia Bonds and Downey 2012; Foster 2012; Herring 1999; Polimeni and Polimeni 2006; Smil 2014; Smith 2011; York 2006; York et al. 2003; York and Rosa 2003).

issues. Some of its members were becoming conscious of the importance of addressing these issues from a business perspective, to preserve the public legitimacy of corporate activity and thus to pre-empt the possibility that governments would enact environmental regulation in response to public pressures (Gleckman 1995). For one, the International Chamber of Commerce (ICC), a major site of neoliberal policy planning (Carroll and Carson 2003; Carroll and Sapinski 2010), took early on the role of spokesperson for the global corporate community. It had already been organizing a series of conferences around environmental themes since 1984, and it finalized its Business Charter of Sustainable Development in 1991. This charter asserted the capacity of the business community to self-regulate and to define for itself both the meaning of sustainable development and the tools to measure it. In 1992, in preparation for the UNCED, the ICC formed the World Industry Council for the Environment (WICE) as a lobbying and policy-planning body. The UNCED, from the start, embedded members of the transnational corporate elite within its administrative apparatus. Its secretary general was Maurice Strong, former oil businessman and chair of the 1972 Stockholm conference. Strong in turn nominated Swiss businessman and billionaire Stefan Schmidheiny as “corporate advisor” to the conference. Schmidheiny went on to establish the Business Council for Sustainable Development (BCSD), a council of 50 invited CEOs to provide private advice on UNCED manuscripts and draft proposals (Gleckman 1995)⁶.

The UNCED produced three main texts: the Framework Convention on Climate Change (FCCC), the Convention on Biodiversity, and Agenda 21. Building on the developments of the 1980s, these three international agreements served to institutionalize the green capitalist project founded on the ideas of sustainable development and ecological modernization (Bernstein 2000, 2002; Carruthers 2001; Chatterjee and Finger 1994), as they all insisted on the foundational character of economic growth and technological innovation to solve global environmental issues (Chatterjee and Finger 1994). After four more years of international negotiations, the Kyoto Protocol emerged out of the FCCC. It embodied the same principles as the treaties that came out of the UNCED, and further introduced an innovation that would become critical in the future

⁶ The WICE and the BCSD would later merge in 1992 to form the World Business Council for Sustainable Development (WBCSD, see Chapter 3).

development of environmental and climate policy: a mechanism of market exchange of greenhouse gas (GHG) emissions permits. This mechanism, carbon trading or carbon markets for short, aimed to make congruent in practice environmental protection – in the form of a reduction of GHG emissions – and accumulation of capital, or in other words, to make reducing GHG emissions profitable (see Bumpus and Liverman 2008; Lohmann 2006; Paterson 2001). Environmental markets have since then become a core aspect of environmental policy and law (M’Gonigle and Takeda 2013) as such mechanisms emerged as the preferred way to address other issues such as biodiversity (see Dempsey 2011)⁷. They constitute the foundational piece of the project of climate capitalism that has been emerging and to which we will now turn our attention.

Climate capitalism

With the increased involvement of the corporate community in environmental politics, the various interests at play and the conflicts between different corporate strategies became more salient, among others in the case of global warming. As environmental issues got on the corporate agenda, global warming also came up as an issue for the corporate community in general, and for the fossil fuel industry in particular, during the late 1980s and early 1990s (Newell and Paterson 2010:37; Weart 2008). Many transnational corporations (TNCs), including the fossil fuel industry and major industrial manufacturers dependent on fossil fuel use, considered the regulation of GHG emissions to pose a direct threat to their profitability (Falkner 2008:195). The corporate community reacted at first by rallying around the major fossil fuel corporations to prevent any serious action from being taken to reduce GHG emissions. Organizations such as the Global Climate Coalition (GCC) and the Climate Council were both formed in 1989 to undertake this task. Oil, coal and automobile companies based in the United States constituted the core membership of the GCC, around which the majority of large corporations also rallied at the time (Levy 1997). As has been amply discussed in the media and in scholarly publications, their main strategy was to foster doubt about

⁷ Environmental markets and the underlying practice of pricing ecosystem services have become so entrenched that their analysis has even become a mainstay of the discipline of ecological economics, originally developed as a critique of the liberal economic approach to environmental issues (Anderson and M’Gonigle 2012).

scientific evidence for global warming so as to undermine the public legitimacy of both international climate negotiations and national-level climate policy, especially in the United States (Newell and Paterson 2010:37; McCright and Dunlap 2000, 2010).

This tactic did not prove completely effective however, and despite the continuing prevalence of global warming denial in the United States (see *inter alia* Antonio and Brulle 2011; Derber 2010; Dunlap 2013; McCright et al. 2013; McCright and Dunlap 2010), international regulatory efforts moved closer to an agreement, that eventually took the form of the Kyoto Protocol. The mid-1990s saw the fossil fuel lobby starting to disintegrate (Falkner 2008; Levy and Kolk 2002; Pulver 2007) as the green capitalist perspective, building on the work of the WCED and the UNCED, was starting to gain traction even among fossil fuel majors. Some of them, BP and Shell in particular, decided to integrate sustainable development and ecological modernization into their discourse and practices, and to move early to take advantage of the new potentially profitable ventures that the Kyoto Protocol promised to open up. They re-branded themselves as “green” corporations by suggesting they were more than oil companies, announced major investments in renewable energy research and development (Levy and Kolk 2002; Pulver 2007), and established internal carbon trading markets to set a precedent that could later be ramped up at the national and international levels (Betsill and Hoffmann 2011; Lohmann 2006). Many scholars argue that this marked a turning point in the history of climate capitalism and that the general attitude of the corporate community toward global warming shifted markedly from this moment on (Derber 2010; Levy and Kolk 2002; Levy and Spicer 2013; Newell and Paterson 2010; Pulver 2007; Vormedal 2011). The growing legitimacy of the climate capitalist project and its promise for increased profit, as well as the objective to limit and orient as much as possible the forthcoming regulation under Kyoto, fostered a diversification of business representation and strategies at climate negotiations. As I will explain further in Chapter 3, several new specialized policy-planning groups which promoted approaching global warming through the perspective of sustainable development and ecological modernization were created, such as the International Climate Change Partnership (ICCP) and the Pew Center on Global Climate Change (Falkner 2008:195). Thus, the 1990s saw climate capitalism move to a

dominant position as it started rallying the support of a larger section of the corporate community.

Yet, despite the shift in the outlook of several TNCs that had been opposed to GHG regulation, the corporate community did not suddenly and as a whole adopt the guiding principles of sustainable development and ecological modernization, and strategic divisions remained. In terms of perceived interests, whereas some corporate executives genuinely embraced climate capitalism, Newell and Paterson (2010) explain that many simply saw carbon trading as a way to avoid more stringent regulations, without necessarily getting on board with the whole discourse of sustainable development and ecological modernization. There were also differences in the perception of the likelihood of national regulation depending on firms' headquarter location. Indeed, since the early 1990s, EU countries have seemed much more likely to adopt GHG emissions reductions targets than the United States, which according to Newell and Paterson (2010:49) has impacted corporate strategies differently on each side of the Atlantic (see also Paterson et al. 2014)⁸. Finally, some believed that merely conceding that action is required on the issue of global warming would open up the stage for stricter regulation; thus they maintained their opposition to any binding climate agreement (Newell and Paterson 2010:48). Hence, despite the growing consensus as to the best political strategy for the members of the corporate community, a level of disagreement remained.

Lines of division were even sharper in terms of purely economic interests. On the one hand, firms had many reasons to support climate capitalism, according to their sector of activity. On the other hand, however, certain sectors definitely stood to lose a great deal from capping GHG emissions. For example, energy savings and thus lower production costs could be achieved by all firms by reducing energy use and with that, GHG emissions, though for energy firms this would entail reduced sales and revenues (see Vlachou 2014). There were possibilities for the latter to benefit from expanding markets

⁸ It could be argued that this is a recursive relationship, as states adopt strategies that will favour the competitiveness of nationally-based capital. Where national corporate communities estimate that reducing GHG emissions favours economic growth and competitiveness, states are likely to regulate in this direction and adopt strong emissions reductions targets, because of corporate lobbying and their perception of national interest. On the close relationship between the state and the corporate world, see *inter alia* Jessop (1990, 2002), Overbeek (2004), van Apeldoorn et al. (2012).

for “green energy”, albeit a great deal of uncertainty continues to exist as to the potential for profits from “green energy” to make up for the losses of fossil fuel income (Vlachou 2014). In the expectation of forthcoming regulation, firms that would prepare early would avoid costs and potential legal liabilities, and might gain an edge in the new markets that would emerge (Newell and Paterson 2010:43–44). Finally, of course, the fossil fuel industry and those who depend on cheap oil inputs would see their revenues greatly threatened by regulation seeking a deep cut in GHG emissions (Newell and Paterson 2010:55).

Hence, because of all these factors, different firms developed different evaluations and thus different strategies to approach the issue of global warming and the prospect of regulation of GHG emissions. Some in the United States went on with global warming denial, as they thought that it was their best chance to avoid the impact of a stringent GHG emissions cap (Derber 2010). Others diversified their investments to take advantage of potential new opportunities in the renewable energy markets and embraced climate capitalism (Jones and Levy 2007). These firms saw in the latter strategy short- and mid-term economic benefits, and they believed the best tactic was to shape future GHG regulation to ensure it did not hurt profits and general accumulation (Derber 2010).

The early 21st century: climate capitalism's uncertain future

The scholarly literature presents a consistent historical account of the period 1980–2000, but the interpretation of the next decade is more contested. The majority of authors describe a continuous process of diffusion of the ideas of sustainable development and ecological modernization from the early 1980s to the present (e.g. Bernstein 2002; Carruthers 2001; Paterson et al. 2014; Pulver 2007). On the contrary however, Park and his colleagues (2008) argue that the 1992 UNCED conference was rather the zenith of such ideas and that since then, environmental initiatives have followed a declining trajectory. The failure of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg even to reiterate the goals expressed in 1992 provides evidence of this decline. Similarly, Redclift (2005) declares that the era of sustainable development came to an end in 2005 as interpretations of the concept diverged into multiple parallel discourses. However, even though sustainable development as an organizing concept

might have declined, the latest developments show that the green capitalist project is still alive and well, and that it continues to exist under the new concept of the green economy (Brand 2012).

The latest major development in the field of global environmental politics was the UN Conference on Sustainable Development (UNCSD), dubbed the Rio+20 summit, that took place in Rio de Janeiro in June 2012, 20 years after the UNCED. The goal of this international meeting was to promote a consensus around a new version of green capitalism, labelled the “green economy” (Goodman and Salleh 2013). The concept of green economy uses a similar wording as that of sustainable development, as both promote some degree of state intervention, market instruments and voluntary approaches to address environmental problems, and the incorporation of the “true” environmental cost of commodities (Brand 2012:29). In reality though, whereas sustainable development developed a conceptual compromise between environmental protection and economic growth, the green economy moves away from that compromise by explicitly subordinating the former to the latter (Van Alstine et al. 2013). The green economy still promotes ecological modernization as a way to increase profitability and to potentially re-launch economic growth after the 2008 financial collapse (Brand 2012; Bullard and Mueller 2012), but it also carries a strong emphasis on the attribution of property rights over the environment (Goodman and Salleh 2013). Thus, the green economy and the related concept of “green growth” now appear to have superseded sustainable development as the organizing frame of global environmental political discussions (Barbier 2012; see also Sharife and Bond 2013). The project appeals both to governments and the corporate community, in their joint quest for the means to start a new cycle of accumulation while winning a modicum of public support (see Brand 2012).

As climate capitalism represents one of the core components of green capitalism, the fates of both projects are intimately related. Thus, assessments as to the future of climate capitalism are similarly divided. Carbon markets have been going through significant turmoil following the European Union Emissions Trading Scheme (EU ETS) crash in May 2006 (see Grubb and Neuhoff 2006). After the global financial crisis hit in 2008, the continued economic slump, combined with the failure of the 2009 Copenhagen Climate

Summit to achieve a consensus on a follow-up to the Kyoto Protocol (see Levy and Spicer 2013), and the failure of the US Congress to pass climate legislation (Lohmann 2012b) ensured that the EU ETS never recovered and that other carbon markets never quite took off. With the uncertainty due to the absence of a global carbon trading regime, the Chicago Climate Exchange shut down in 2010, the price of carbon at the European Climate Exchange still hovers around €5/ton at the time of writing (Reuters 2014c, 2014d), and both the Chinese municipal-level markets and the recently launched joint California-Quebec market have been trading close to their respective floor prices of \$10 and \$11/ton (Carroll 2014; Reuters 2014a, 2014b). These dismally low prices, combined with the extreme volatility of carbon markets, are very unlikely to promote hoped-for long-term investments in low emissions technologies (Lohmann 2006; Newell et al. 2013; Vlachou 2014)⁹.

Notwithstanding these recent developments, other scholars argue that independently of the success of international climate negotiations, initiatives by TNCs and other corporate organizations have been developing since the mid-1990s and that the system of climate finance is now well entrenched (Bernstein et al. 2010; Newell and Paterson 2010; see also Betsill and Hoffmann 2011; Paterson et al. 2014). New markets for low emission technologies grew, and emissions trading markets have been set up in many countries under the Kyoto Protocol or outside of it (see Betsill and Hoffmann 2011; Lo 2013), and some go as far as to describe climate capitalism as a new regime of “accumulation by decarbonization” that is currently emerging from this movement (Newell and Paterson 2010; Paterson et al. 2014).

⁹ A recent analysis suggests that each \$10/ton increase in the price of allowances would result in a meager 1.5-6% reduction in GHG emissions compared to a scenario without carbon markets; moreover, this reduction would likely derive from short-term adjustments such as fuel-switching and energy conservation rather than longer-term investments in new technologies (Newell et al. 2013:131–132). An earlier assessment estimates that for the EU to achieve its objectives of reducing GHG emissions by 20% and increasing the proportion of renewable energy to 20% by the year 2020, EU ETS prices would have to maintain a level of €39/ton (European Commission 2008, cited in Vlachou 2014:144, note 33), a price that was never attained even before the 2006 collapse. A 2009 report sponsored by the Climate Group came up with a comparable estimate of \$65/ton (around €46/ton at the time), but found that international collaboration greatly reduces the required market price of carbon, down to \$28/ton in the case of an agreement between the EU and the US, and to as low as \$4/ton in the very unlikely case of a global agreement involving all countries (Barker et al. 2009).

Taking some distance from these debates, it is important to note that most of the discussion rests as much on the various strategic assessments of the possibility to slow down global warming in time to avoid a global catastrophe as it does on objective appraisals of the prevailing conjuncture, as those writing on the topic are also political actors within climate politics. This is evidenced in the debate among the left described in Chapter 1 (pages 3-7), and that underlies the main questions I address in this work. As I already explained, on the one hand, some believe that, despite their many well assessed shortcomings, carbon markets are the only policy currently on the table with some capacity to address global warming. Thus, for them it is crucial to give strategic support to such a policy and to make every effort to assure that it does truly deliver emissions reductions in time (Hahnel 2012a, 2012b; Newell and Paterson 2010; Paterson and Newell 2012). On the other hand, these people received a harsh reply from those arguing that carbon markets do not represent a realistic solution but a move away from addressing global warming in a timely manner, while deepening social and environmental injustices built into existing global structures of domination (Lohmann 2011, 2012a; Bond 2013; see also Derber 2010). It appears that lines of fracture transect academia and counter-hegemonic forces in general, perhaps even more than the corporate community.

To summarize, a struggle has been taking place since the 1980s to capture the meaning of how environmental protection is to be achieved in practice. The corporate community organized early on to shape the debates around this crucial issue, including those around the newly forged concept of sustainable development. This continued the foundational work of the OECD and a small number of individual members of the global corporate elite. The 1984 OECD International Conference on Environment and Economics, and later the much publicized 1987 WCED report brought to the international scene the idea of sustainable development as a compromise between environmental protection and economic growth. Following from the WCED report, the 1992 UNCED conference proceeded to institutionalize sustainable development and ecological modernization within several international conventions, including the FCCC addressing global warming, and also brought these concepts greater public visibility. In the realm of

climate politics, the movement toward climate capitalism continued with the adoption of the Kyoto Protocol in 1997, which embodied the principles institutionalized by the UNCED, in the form of market instruments and carbon trading. In the same year, part of the oil industry shifted its position to support the emerging green capitalist project, with many other TNCs following suit. As a consequence of this shift in position, the main corporate organizations opposing GHG regulation rapidly faded from the public scene. At the same time, new corporate environmental policy groups were created that became active in green capitalist KPM, and other already existing groups became more active in the areas of environmental and climate politics.

Thus, beginning in the early 1990s, a global apparatus of climate capitalist knowledge production and mobilization (KPM) was put in place that included several international governmental organizations, international conventions, corporate funded policy-planning groups, and a network of UN sponsored conferences steered by members of the globalizing segment of the political and corporate elite. The work of this KPM apparatus paved the way for a closer alignment of global environmental politics and climate politics with corporate interests and away from grassroots views. It first developed the discourse of sustainable development as a compromise between economic growth on the one hand and environmental protection on the other. Second, to this discourse became attached an ensemble of practices of ecological modernization that favour capital accumulation all the while promising to reduce the environmental impact of capitalist growth. The work of this KPM apparatus transformed the field of climate politics in a lasting way by making prominent, almost hegemonic, this particular set of ideas and practices that I am referring to as climate capitalism. The KPM work performed by these elite organizations and individuals captured the meaning of the nascent concept of sustainable development and reconstructed it on neoliberal foundations. This allowed the neoliberal section of the corporate elite to use the sustainable development and ecological modernization discourses to bear greater weight on climate policies at all levels.

At the same time, the promise of sustainable development and ecological modernization managed to rally other constituencies interested in preserving the natural world. However, as I will discuss later, a deep instability characterizes this environmental

“compromise”, as forces on both sides contest the climate capitalist project by building their own KPM apparatuses of think tanks, policy-planning groups and other organic intellectuals. Briefly, from an eco-social realist point of view (see Hatt 2013), the historical evolution of the field is determined by the decisions of multiple individuals which are enabled and constrained by the various organizations in which their lives are embedded, including class organizations, and are engaged in a struggle for dominance over the field (Bourdieu 1991, 2011). These organizations are themselves in turn embedded within the broader political-economic structures of capitalism that determine their range of practices. The next section will provide more details about how green capitalism closely embodies the neoliberal project that also emerged in the late 1970s and early 1980s.

Neoliberalism and the climate

Commodifying nature and the atmosphere

As it did in other fields of politics, neoliberalism deeply shaped the debates about sustainability since their inception. The neoliberal regime was designed and established as a way out of the crisis of the 1970s. At that time, the Fordist regime founded on Keynesian interventionist measures that had developed in the post-Second World War era was entering into a crisis as it was becoming less able to maintain overall corporate profits. International competition was increasingly fierce as the rebuilt European and Japanese industry were entering the global market. At the same time, industrial wages in core capitalist countries were increasing as part of the post-war Keynesian social compromise, exerting pressure on profits as well (see Harvey 2005, 2011; Lipietz 1992). Briefly, the new neoliberal regime sought to restore corporate profits by 1) allowing investments to move from the industrial to the more lucrative financial sector; 2) reducing state economic involvement by facilitating the sale of state-owned enterprises to corporate interests; 3) increasing the productivity of labour in core countries by freezing or even decreasing real wages; and 4) allowing capital to move freely so it could take advantage of the lower cost of labour and other production factors in peripheral and semi-peripheral countries (Harvey 2005). From this reorganization of investment patterns emerged on the one hand a financialized economy in which an increased proportion of

capital came under the control of the financial sector, thus providing this sector with greater political power (see Harvey 2005; Peetz and Murray 2013). On the other hand, production became truly global, as the development of a range of new communications and transport technologies allowed for the complexification and fragmentation of commodity chains (Lawson 2011; Robinson and Harris 2000). Politically, these economic transformations were coordinated by a multiplicity of transnational instances, with at its core the UN system, including financial agencies such as the IMF and the World Bank, and intergovernmental organizations and forums such as the OECD, the G-8, the G-20, and the European Commission (Robinson 2004). This new political-economic regime allowed accumulation to resume more or less stably for the next 35 years or so, although this recent period was marked by periodic crises (Harvey 2011; Lipietz 2013).

As we saw above, the project of green capitalism embodies foundational neoliberal principles, and subordinates all other policy goals to economic growth on a global scale (Van Alstine et al. 2013). More precisely, referring to the four processes outlined by Harvey (2005) above, green capitalism:

1. Relies on financial instruments such as emissions trading allowances and ecosystem service pricing, founded on a financialized economic framework (Büscher et al. 2014; Sullivan 2013);
2. Seeks to avoid direct environmental regulation and instead devolves regulatory powers to non-governmental organizations and to corporations as self-regulating entities (Rowe 2005; Sklair 2001; Sklair and Miller 2010);
3. Reduces input costs of production by increasing the energy efficiency of processes of production (Bonds and Downey 2012; Hawken et al. 1999; Simonis 1989); and
4. Allows investments in environmental markets to move freely across borders, so as to take advantage of the lower costs of reducing GHG emissions and other sources of pollution in peripheral and semi-peripheral countries (Böhm, Murtola, et al. 2012).

All of these processes directly relate to environmental markets, which require attributing prices and property rights to various elements of the natural environment. This makes them amenable to cost-benefit calculations (Dempsey 2013; Lohmann 2006, 2014; Robertson 2006) and opens up new avenues for capitalist accumulation through the creation of new commodities (Castree 2003; Lohmann 2006, 2014; Sullivan 2013).

The commodification of various elements of nature, often referred to as “pricing nature” (see Spash 2013; Sullivan 2013), designates a complex process of assigning private property rights, and concomitantly an exchange value, to elements of the world that were previously either freely accessible or owned and managed as commons and thus existed outside of capitalist circulation (see Bollier and Helfrich 2012; Ostrom 1990; The Ecologist 1993). It is mainly a political process, and thus relies on state regulation (Castree 2003; Lohmann 2006). In short, the commodification of nature involves:

1) assigning a legal title to the new owner – individual, group or institution – who will then have the right to dispose of the commodity as they see fit, including the right to sell it; 2) creating the conditions for the owner of the commodity to exert their right of property, and to be able to sell the commodity (Castree 2003:279–280). Many conditions relative to the physical nature of the thing that is commodified need to be fulfilled in order for owners to be able to sell a newly created commodity (Castree 2003). The would-be commodity first needs to be separated from its natural substrate and divided into clearly defined units that can change ownership. This may require the creation of physical barriers, for example in the case of land, and/or symbolic barriers in cases such as copyrights, genetic codes, or the capacity of the earth to cycle GHGs. Second, the newly minted commodity needs to be made countable or measurable. Third, it needs to be abstracted from its place in space and time, so that it becomes equivalent to other things of its category, independently of their physical and temporal location. Fourth, it needs to be accorded a monetary price, so that it can be compared and measured against other commodities of a different nature, and thus incorporated as an exchange-value into the market. This process of creating new commodities is highly political, as it rests on multiple legal changes which may be open to contestation. It also requires technical expertise to create abstract, measurable, and exchangeable commodities from what is in

reality part of the continuous fabric of the natural world (Bumpus and Liverman 2008; Castree 2003; Lohmann 2006; Sullivan 2010; The Ecologist 1993).

The project of climate capitalism rests on commodifying access to the capacity of the earth to assimilate carbon dioxide and other greenhouse gases. As is the case with other instances of the disruption of natural cycles, neoliberal economic analysis approaches global warming as a “tragedy of the commons”. According to such an analysis, the carbon cycling capacity of the planet has been used as a “free access good” as everyone dumped their GHG emissions without further thought, and this situation needs to be remedied by assigning property rights to the planet’s carbon cycling capacity, so that the individuals and groups owning it have an incentive to preserve it for their future private use (e.g. Giddens 2009; Soroos 2005; see Altvater 2011; Murphy and Murphy 2012). This is to be accomplished by incorporating the planet’s carbon cycling capacity’s cost into the accounting systems of capitalist firms so that its increasing scarcity can be reflected in market prices. “Low carbon” production technologies could then be developed as dumping GHG emissions in the atmosphere would gradually become more and more costly (see Bitter 2011; Böhm, Misoczky, et al. 2012; Bumpus and Liverman 2008; Lohmann 2006).

This is what the Kyoto Protocol and other voluntary agreements addressing global warming have explicitly sought to do: to make the earth’s carbon cycling capacity into a tradable commodity. The mechanism of carbon trading incorporated into all of these agreements requires the creation of permits, or allowances, each representing a parcel of this carbon cycling capacity. The commodification process has followed a characteristic script. First, a certain number of these permits to emit carbon dioxide and other greenhouse gases are put into circulation, admittedly to create the scarcity needed to move away from the prevailing “tragedy of the commons”. The number of such permits put into circulation depends on each country or region’s emissions reduction target under prevailing agreements.

Second, emitters need to acquire a sufficient number of these permits to cover their GHG emissions, either from the government or from other emitters who own extra

permits that they are willing to sell. As part of the Kyoto Protocol, countries of the capitalist core that were bound to reduce emissions¹⁰ were also allowed to “offset” their emissions by investing in projects in participating peripheral and semi-peripheral countries, through the Clean Development Mechanism (CDM) and Joint Implementation (JI). Firms investing in CDM or JI approved projects receive credits that they are in turn allowed to use against their own domestic emissions, under the assumption that emissions reductions are equivalent anywhere in the world (see Bumpus and Liverman 2008; Lohmann 2006).

Third, governments or regulatory agencies need to gradually reduce the number of permits in circulation, according to a predetermined schedule of emissions reductions to be achieved. As a whole, this process creates and distributes new property rights and thus effectively commodifies the earth’s carbon cycling capacity by dividing it into discrete units abstracted from space and time that can be traded on global markets (Bitter 2011; Böhm and Dabhi 2009a; Lohmann 2006, 2014)¹¹.

Green capitalist and ecological modernization ideals, and thus ultimately the neoliberal precepts they embody, inform the stated goals of carbon markets in two respects. First, such an approach is designed to avoid direct regulation of GHG emissions, e.g. by forcing firms to adopt the best available technologies, but rather aims to provide incentives for firms to develop and implement the lower emissions technologies they calculate to be the most appropriate for them. Carbon markets are thus designed to increase the cost-effectiveness of ecological modernization strategies by allowing firms who decrease emissions beyond their target to sell any extra permits they own to other firms that for various reasons do not attain theirs. Second, this process is intended to encourage to achieve fastest and maximum emissions reductions at the lowest total cost without any direct regulation by the state. As per the play of market incentives, cuts should be realized first where it is the cheapest, independently of where this happens to

¹⁰ These are the countries listed in Annex I of the FCCC (see http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php).

¹¹ Like any aspect of nature being commodified, GHG emissions permits representing the earth’s carbon cycling capacity remain *fictitious* commodities as, contrary to other commodities, biogeochemical cycles were obviously not produced for the express purpose of being traded and generating profits (see Polanyi 2001 [1945]).

be (see Böhm, Murtola, et al. 2012). Carbon markets are thus presented as a practical means to reduce emissions through minimal state intervention while at the same time creating new accumulation opportunities (Bumpus and Liverman 2008; Newell and Paterson 2010; Paterson 2001, 2009) – in perfect line with green capitalist objectives and neoliberal ideals.

The effects and costs of the commodification of the atmosphere

Even though carbon trading has been quite successful in opening up new profit opportunities (Böhm, Murtola, et al. 2012; Newell and Paterson 2010), a large number of scholars now recognize that this approach has so far failed to produce any meaningful reductions in GHG emissions, because of its many fundamental flaws (Bitter 2011; Böhm and Dabhi 2009b; Böhm, Misoczky, et al. 2012; Böhm, Murtola, et al. 2012; Bond 2013; Brunnengräber 2009; Gilbertson and Reyes 2009; Lohmann 2006, 2008a, 2012b, 2014; Pearson 2007; Vlachou 2014; Wara 2007). According to critics, carbon markets have only been effective in two respects: 1) in facilitating capital accumulation through dispossession and privatization of the commons in the global South, and encouraging speculation and rent-seeking among owning elites (Lohmann 2008a:361; see also Foster and Clark 2009; Isla 2009; Salleh 2010); 2) in delaying action to address global warming, a partly unintended consequence yet also an outcome welcomed by all those corporations dependent on fossil fuels (Derber 2010; Lohmann 2006; Lohmann and Böhm 2012), especially since the economic crisis that erupted in 2008 has actually brought a much increased dependence on fossil fuel-based accumulation as a means of generating short-term profits (Bitter 2011; Lohmann and Böhm 2012).

Indeed, according to critics, carbon markets cannot produce any other outcome, for the following reasons. First, international climate treaties, even though they use the language of binding agreements, are in effect optional. This is demonstrated by the refusal of the United States to ratify the Kyoto Protocol and by the decision of Canada to pull out of the treaty in 2011. By implication, the agreed upon GHG emissions reductions targets have in reality no binding effect, and thus by no means constitute an assurance of emissions reductions (Lohmann and Böhm 2012). It is thus easy for states for whom such

treaties threaten to hurt economic interests and reduce international competitiveness to renege on their commitments (see M'Gonigle and Takeda 2013).

Second, the abstraction of GHG emissions from the time and place of their production under the assumption that GHGs have the same effect on the climate independently of their source poses a crucial problem. The possibility to buy credits instead of directly reducing emissions has the effect of encouraging short-term measures that would make large amounts of credits available rapidly instead of long-term structural changes and innovations that would help transition away from a fossil fuel-based economy (Lohmann 2006:104, 2008a; Pearson 2007). Moreover, it institutionalizes incentives to such short-term measures in international law and corporate practice (Liverman 2009:296). Similarly, the possibility of offsetting GHG emissions by investing in emissions reductions elsewhere (such as the CDM) in effect transfers the problem – and its associated costs – from core capitalist countries to the periphery and semi-periphery. This deters effects toward structural changes in the core of the world-economy, which would produce a greater and longer-term beneficial effect (Lohmann 2008a:362, 2006; Pearson 2007). This is why Bumpus and Liverman (2008), following Harvey (2005), argue that carbon markets and emissions offsetting provide a “spatio-temporal fix” to the problem global warming presents for capitalist accumulation: they encourage short-term measures outside of core countries, that push back costs to a later moment in time and move them to peripheral and semi-peripheral locations.

Third, there are scientific and technical uncertainties that undermine the effectiveness of carbon markets. Thus, measuring GHG emissions poses enormous difficulties and may not always be feasible in practice (Lohmann 2006, 2008a, 2014; Vlachou 2014). Emissions offsets, as they are based on estimations of the future emissions of a project before it is actually realized, are definitely not measurable nor verifiable (Lohmann 2008a; Vlachou 2014), and the complex processes involved in estimating them opens many possibilities for fraud by means of “creative accounting” (Bumpus and Liverman 2008). As well, the process of reducing all greenhouse gases to a single measure of “carbon dioxide equivalent” (CO₂e), necessary for the abstraction of the earth’s capacity to cycle carbon, is founded on scientific estimations of the differential impact of these

gases that have changed in the past, and are extremely likely to change again as scientific research progresses. This inserts a fundamental uncertainty as to the actual climatic effect of the reduction of one or another gas, possibly by several orders of magnitude in certain cases (Lohmann 2008a:361).

Despite their documented ineffectiveness in achieving meaningful GHG emissions reductions, carbon markets have nevertheless been very potent instruments of wealth redistribution from the bottom to the top. First, as explained above, they allowed GHG emitters from core countries to avoid paying the cost of reducing their own emissions, and to transfer these costs to emitters located in countries that have historically benefited relatively little from fossil fuel-based accumulation (Bumpus and Liverman 2008; Lohmann 2008a:363). Second, and most importantly, they have provided a further justification for the dispossession of people in peripheral and semi-peripheral countries who live off the land, and their subsequent immiseration, through commodification of forests as “carbon sinks” (Isla 2009), the commodification of land for large plantations, and expulsion of people for the construction of large hydro-electrical dams (Lohmann 2006)¹². Third, again because of the abstraction process upon which they rely, carbon markets do not distinguish between luxury emissions and survival emissions. They thus put equal responsibility for reducing emissions on subsistence farmers in Africa, Asia, or elsewhere on the one hand, and elites driving large cars or flying in private jets on the other hand (Agarwal and Narain 1991:3; Lohmann 2006). This again shifts relative costs to those with the lowest capacity to pay for reducing emissions, while allowing elites to preserve their lifestyle. Finally, Lohmann (2008a) argues that carbon markets produce

¹² The following few examples illustrate well such dynamics: in Costa Rica, the government expelled small farmers from their lands in order to create national parks that would allow it to obtain carbon credits from reforestation and protection of existing forest land. The farmer folks lost their lands (of which a large part served as common pasture by the community) and thus their livelihoods, and were forced into slums and other forms of precarious urban existence (Isla 2009). In Kenya, between 2004 and 2008 large tracts of land were sold to a UK-based company, which was to establish tree plantations for which it would obtain CDM credits; the farmers living on these lands were framed as “encroachers” by the government and forcibly evicted without being provided any alternative land (Carrere 2009). Again in Kenya, the Sondu Miriu dam got CDM approval in 2007; for its realization, over 1000 households were displaced without fair compensation, 13 kilometres of river were diverted, depriving another 1500 households of their water source, and the release of untreated water back into the river led to the loss of once abundant local fish and thus deprived many more people of part of their livelihood. Similarly, the CDM approved Campos Novos dam in Brazil displaced 3,000 people and affected several thousand more living downstream (Haya 2007:8). Other such cases abound (e.g. see Böhm and Dabhi 2009b; Gilbertson and Reyes 2009).

and perpetuate ignorance in multiple ways: 1) the sale of carbon offsets to individuals on voluntary markets hides the structural roots of global warming, and leads people to believe that the issue can be addressed by individual choices, thus transferring the “guilt” onto individuals (Lohmann 2008a:363); 2) the extensive jargon used in scientific assessments, international agreements, and technical discussions fosters the ignorance by the public and commentators of what is or is not actually being done (Lohmann 2008a:364); and 3) the narrative of green capitalism and ecological modernization presents fossil fuel companies as the most important protagonists to address the issue, while it conceals the contributions of social movements and local communities (Lohmann 2008a:363; Liverman 2009).

Thus, the project of climate capitalism and its main instantiation in carbon markets have costs and benefits that are distributed unequally along class divisions. Those whose labour involves maintaining the social-ecological metabolism, such as women, peasants and indigenous peoples located mostly in peripheral countries (see Salleh 1997), bear the great majority of its costs, while propertied elites of both core and peripheral countries reap its benefits in terms of profit opportunities (Bond 2013; Isla 2009; Salleh 2010; Vlachou 2014). As noted above, these are not independent processes: the enrichment of the elites is dependent on the processes of dispossession characteristic of capitalist expansion that are facilitated by climate capitalism and carbon markets. The next section looks at the relationships of power constitutive of climate capitalism and the actors involved in the field.

Projects of climate politics

I have in the above historical account traced elite influence in global environmental politics and the development of green capitalism and climate capitalism. I mentioned some of the individual agents and organizations involved in articulating and disseminating the perspective of the corporate elite, according to which environmental protection must be made compatible with sustained economic growth. We saw that corporate organizations, transnational state institutions, and certain environmental NGOs have come together to elaborate the project of green capitalism. As well, we saw that certain key texts and events enabled the circulation of this perspective among broader

constituencies, contributing to its political acceptance and legitimacy. In this section, I will look at the different projects engaged in the climate politics struggle, from both a hegemonic and counter-hegemonic perspective. This will allow me to discuss how power relations play out in and contribute to constructing the field of climate politics, and how they constitute an element that is crucial to an understanding of the current debates. But first, I will briefly provide some theoretical guideposts and examine the main concepts informing this work.

Knowledge, corporate power, and the concept of hegemonic project

Climate capitalism can be construed as a “hegemonic project”. By this I mean an ensemble of strategic policy proposals for implementing moderately or radically different political-economic arrangements, or maintaining an existing regime (see Jessop 1990). According to Gramscian theory, the establishment and reproduction of a stable regime of accumulation in the world-economy (see Arrighi 2010) depends on the degree to which the dominant classes manage to exert their hegemony over subordinate groups (Carroll 1990, 2007b). This requires the mobilization of various social forces, realized by developing and fostering adhesion to an economic and political project that appeals to broader constituencies and permits a mediation of their different interests (Jessop 1990). Such projects are designed and articulated by what Gramsci (1971) calls ‘organic intellectuals’, who through their intellectual production and other activities of knowledge production and mobilization (KPM) serve to construct the interests of various social groups, classes or class fractions to which they belong and which they represent, and articulate these interests within hegemonic projects (Jessop 1990:208). By elaborating such projects, organic intellectuals seek to rally support from multiple social constituencies: the different fractions of capital, state departments and agencies, and various sections of civil society. Hegemonic projects thus need to be congruent to some degree with the process of capital accumulation in order to secure the support of the main economic agents, at the same time as they incorporate some measure of compromise with or concessions to other groups in order to gain sufficient support from civil society, the state and other fractions of capital (Jessop 1990).

Hegemonic projects, as they represent different proposals for maintaining or transforming existing political-economic arrangements, articulate as such different ideas about how should be organized the metabolic relationship between humans and the territory. Such projects imply both a mode of production to obtain the necessities of life from the natural world, and a political regime to regulate property relations that determine how to relate to that world (see Benton 2000). Thus, hegemonic projects, fundamentally, consist of different views on how humans should relate to the territory they occupy; in the case of climate capitalism, the territory is the whole planet.

Today, the main agents organizing the metabolic relationship are corporations. Once a marginal and very restricted mode of property, the joint-stock company became the dominant mode of organizing the process of capital accumulation during the mid- to late-1800s (Prechel 2000; Roy 1997). With this change arose new economic dynamics: ownership of the means of production gradually became concentrated in the hands of these organizations that were legally independent from their owners, and subsequent legislation established as the sole purpose of corporations to provide returns to their shareholders (Bakan 2004). This consolidated capitalism's need for constantly increasing the scale of accumulation which ensues from the dynamics of competition (Marx 1976; O'Connor 1998; Sandler 1994) and debt (van Griethuysen 2010).

As the main form of organizing the metabolic relationship, corporations are thus necessarily active in both the economic field and the political field, and corporate power has decisively shaped both. Economically, corporations decide how to organize the labour process, plan corporate strategy, and are responsible for allocating their surplus to certain sectors and not to others, according to return forecasts and the dynamics of competition (Carroll 2004). Politically, they devote part of their surplus to fund parties and politicians, lobby governments, and support various think tanks and policy planning groups (Brownlee 2005; Domhoff 2014). Within a corporation, the board of directors is the crucial organ where such economic and political decisions are made. It is elected by the shareholders on the basis of the number of shares they own, and is usually made up of insiders, the corporation's top executives and large shareholders, and outside directors who in theory represent the interests of all shareholders (Carroll 2004; Scott 1997). Even

though they are usually considered strictly economic entities, corporations thus hold considerable power over both the political and the economic fields, and most of this power is concentrated in the hands of their directors.

Corporations and their directors need to be studied within the context of a wider system of interlocking directorates within which they are embedded (Carroll and Sapinski 2011; Fennema and Schijf 1978; Scott 1985). When a director from one firm sits on the board of another, this creates an interlock between the two firms. From the point of view of the corporations involved, interlocks can have multiple functions (Mizruchi 1996): 1) they can be created as control or monitoring mechanisms, such as when a bank requires a position on the board of one of its clients; 2) they can provide a source of information about other economic sectors, broadening their “business scan” and thus helping plan expansion and investments; 3) firms often invite prestigious individuals to their boards as a source of expertise, reputation, and business and political contacts. For the individuals involved, service on multiple boards brings prestige, remuneration, and possibilities to make personal contacts and enhances career advancement (Mizruchi 1996). Beyond direct instrumental benefits though, the network created by interlocking directorships has been found to provide a broad basis for economic coordination in general, and the control of flows of capital by large banks in particular (Hilferding 1981 [1910]; Mintz and Schwartz 1985). Board interlocks also provide a basis for the cohesion of the corporate elite, a prerequisite for coordinated political action, by increasing contact between individual members of the elite and thus shaping a common worldview, increasing solidarity across business sectors, and making corporate directors conscious of their participation in the economic elite (Burris 1991, 2005; Domhoff 2014; Koenig and Gogel 1981; Miliband 1969; Useem 1978, 1984). In this sense, Useem (1984) developed the idea that directors of multiple firms are part of an “inner circle” at the top of the corporate community, whose members control more wealth than non-interlockers, are more connected to the financial sector, show greater cohesion, and have more political influence. As emphasized by Mizruchi (1996), each interlock exists for a specific reason, but considered as a whole, the network of corporate interlocks is indicative of relations of power of two kinds: instrumental power stemming

from the accumulation of capital, and structural power associated with class hegemony (Carroll and Sapinski 2011; Scott 1985).

The study of interlocking directorates has broadened its scope in the recent decades to include links between large corporations and other organizations funded by the corporate elite, such as philanthropic foundations, university boards, non-profits, think tanks, and policy-planning groups. Foundations, by supporting academic research, NGOs, media, think tanks, and so on, are one of the major channels through which corporations and corporate elites allocate surpluses they control to shape the political field (Arnove 1980; Brulle 2013; Parmar 2002, 2012a). Similarly, serving on university boards allows corporate elites to influence the general orientation of higher education (Carroll and Beaton 2000) and corporate presence on the boards of NGOs and other non-profit organizations guarantees them a presence and measure of influence within civil society (Domhoff 2009). Think tanks and policy-planning groups, for their part, play a major part in the KPM process as corporations fund them specifically to produce politically-informed research and to develop ideas to address the problems faced by the corporate elite, often relating to overcoming the various contradictions and crises of the accumulation process (Burris 2008; Carroll and Carson 2003; Carroll and Sapinski 2010; Carroll and Shaw 2001; van der Pijl 1998). Thus, think tanks and policy groups have been involved in major ways in producing and mobilizing knowledge that gave rise to the hegemonic bloc that led the neoliberal turn of the 1970s and 80s, transnationally (Carroll and Carson 2003; Gill 1990, 1995; Mirowski and Plehwe 2009; Plehwe and Walpen 2006) as well as within specific nation-states (Burris 2008; Carroll and Shaw 2001; Macartney 2008; Paretsky 2004). Such organizations have also been actively involved in promoting the construction of the European Union (van Apeldoorn 2000, 2002) and other projects of regional integration (Carroll and Sapinski 2010; Gill 1995). They have been similarly involved in climate politics, where the action of a wide-ranging network of think tanks in support of global warming denial groups has been recently documented (Brulle 2013; Dunlap and Jacques 2013; Jacques et al. 2008; McCright and Dunlap 2003, 2010). But more than producing political research, think tanks and policy groups also function as meeting places where top capitalists convene together. There, they can

exchange views and discuss current affairs and issues affecting the capitalist political-economy as a whole, forge consensual positions, and elaborate hegemonic projects (Carroll and Carson 2003; Carroll and Sapinski 2010; van der Pijl 1998). Viewed from an inter-organizational perspective, policy groups and think tanks often act as brokers within the broader intercorporate network, by bringing together corporate directors that would not otherwise meet, thus pulling the intercorporate network closer together (Burris 2008; Carroll and Carson 2003; Carroll and Sapinski 2010). As well, oftentimes elites from the state, academia, media, and other sectors participate in the governance of policy groups or in events organized by them, and thus such organizations also are places where views are shared and cohesion is forged among the elites of different sectors. In this sense, policy groups constitute a space for the convergence of a now global power elite, as first described by Mills (1956; see also Porter 1955, 1956).

To sum it up, policy-planning groups can be considered major vectors of corporate power: as organizations, they provide an infrastructure that gives coherence to class leadership and contribute to constitute classes or class fractions through knowledge production and mobilization, as I will now explain.

Hegemonic projects and the climate crisis

As part of the process of climate politics, organic intellectuals deploy various discursive strategies to foster adhesion to the hegemonic projects they advocate. An important part of the work of organic intellectuals is to produce descriptions of the structure of the political field that concur with the hegemonic projects they support. Such descriptions include naming the forces involved in the hegemonic struggles taking place in the field. The action of mapping out a field and the forces active in it produces categories through which other actors may conceptualize the struggle and their position within it. Said otherwise, the categories created by organic intellectuals to describe a field provide more than a simple description: they define the forces and projects the actors of the field may side with or oppose (Bourdieu 1991: Ch. 8). For example, the work of Marx and of other socialist writers produced a description of the struggle between capitalists and workers as constitutive of the capitalist mode of production (e.g. Marx 1976 [1867]; Marx and Engels 2000 [1848]; see Williams 1983:67–68). Marx's

categorization runs counter to the more readily apparent divisions of race, ethnicity, gender or age, and to the narrative of social mobility that holds out the possibility for unskilled workers to go up the socio-economic ladder to reach positions of wealth and power. The categorization of the social world into the categories of “bourgeois” and “proletarian” contributes to workers’ understanding of their common condition, thus creating unity among them instead of division, which in turn can function as a strong basis for trade unionism and other forms of political action. Thus, the struggle to define social categories is at the crux of the KPM process transecting the political field (Bourdieu 1991, 2001:398–401). In this section, I will critically review different categorizations of the forces constitutive of the field of climate politics.

A first group of authors, mainly academics from political science and management studies, describe the field as a struggle between two opposite projects. On the one hand, “big oil” and other fossil fuel corporations, together with their conservative political allies mainly located in Anglo-Saxon countries, support the dominant project of “carboniferous capitalism”. This expression, which Newell and Paterson (2010) borrow from Lewis Mumford (2010 [1934]), captures the “business-as-usual” accumulation scenario founded on the unlimited exploitation of fossil fuels. Newell and Paterson’s (2010) narrative counter-poses carboniferous capitalism to the contender project of climate capitalism (see also Levy and Egan 1998; Levy and Kolk 2002; Lovins 2010; Pulver 2007; Vormedal 2008). This storyline, which was the mainstream, “standard” description of climate politics between about 2000 and 2010 (see Levy and Spicer 2013), emphasizes the division of the corporate community between the two projects. The split appeared publicly when many TNCs, including part of the oil industry, announced that they were embracing climate capitalism starting in 1997 (see Levy and Kolk 2002; Meckling 2011; Pulver 2007). It is interesting to note that authors writing from neo-pluralist (Falkner 2008; Meckling 2011), neo-institutionalist (Pulver 2007; Vormedal 2008), and neo-Gramscian perspectives (Levy and Kolk 2002; Newell and Paterson 2010) all use exactly the same binary categories to describe the hegemonic struggle around climate politics. This has led Meckling (2011) to cleverly observe that neo-Gramscians and neo-pluralists produce a fundamentally identical analysis, except for the

neo-Gramscian assumption that unobserved latent structures of power produce the observed outcomes. Notwithstanding this difference in approaches, the reduction of the field to a struggle between “hegemonic” carboniferous capitalism and “counter-hegemonic” climate capitalism is problematic, as it presents corporations as the only meaningful actors of climate politics (Lohmann 2008a:364): either they strive to influence national and transnational state institutions to support their respective projects, thus reproducing the classic pluralist model of politics (e.g. Dahl 1961), or they address the issue themselves through voluntary measures and self-regulation, without resort to governmental regulation. As Lohmann (2008a) observes, constructing the field along these lines obscures alternative projects that challenge in a more general way both carboniferous and climate capitalism, and marginalizes the actors advocating these projects (see also The Corner House 2013). Such narratives hence contribute to a narrowing of the thinkable political options, and in this way are to be themselves considered as part of the field of climate politics, of which they shape the composition and evolution (see Bourdieu 1991; Carroll and Shaw 2001)¹³.

This critique does not imply that the categories used by Newell and Paterson (2010) and others are not related in some way to the actual struggles taking place. Rather, these categories are constructed by intellectuals who are themselves part of the field and through their discursive production contribute to its constitution and forward movement¹⁴. These intellectuals construct categories by selecting elements of the world, on the basis of academic principles as much as political ones (see Bourdieu 1991; Crépeau 2001). For this reason, as emphasized by The Corner House (2013), the reality of climate politics is much more complex than that which is portrayed in any of these texts.

Other categorizations, produced from a standpoint more closely tied to the struggle of dominated groups, also make use of these two categories to classify the projects or forces present in the field. However, because they operate with broader selection criteria that take into account class relations, they also produce supplementary categories that

¹³ Indeed, as we will see in Chapter 3, it is this same narrative that corporate supporters of climate capitalism adopt.

¹⁴ Which Newell and Paterson (2010) recognize at least implicitly in their foreword to the book.

describe projects challenging the existing capital relations, such as ecosocialism and the “reclaim the commons” movement. Wainwright and Mann (2013) present a broad classification of climate hegemonic and counter-hegemonic projects along their economic and political dimensions. They contend that economically, projects to address global warming can be either pro-capitalist or anti-capitalist, and that politically, they can be either state-centred (“sovereigntist”) or localist. Wainwright and Mann thus define four ideal-types:

1. A capitalist centralist project they name “climate Leviathan”. This project would take the form of a world government based on the alliance between capital and the state, imbued with global authority to regulate GHG emissions through various mechanisms compatible with capitalist accumulation. Climate Leviathan roughly equates to climate capitalism as described above;
2. A capitalist non-centralist project, “climate behemoth” – roughly amounting to carboniferous capitalism –, that rallies nationally- and locally-based conservative economic and political elites, religious fundamentalists and a popular base wary of “big government”; it is currently articulated mostly in Anglo-Saxon countries but also elsewhere (e.g. Lomborg 2010);
3. A project of a global anti-capitalist state-like authority imbued with emergency powers to curb climate change against the will of capital (“climate Mao”). Under the current circumstances, Wainwright and Mann estimate such a project, though rather unlikely, would coalesce under the leadership of China (Wainwright and Mann 2013:10);
4. An anti-capitalist non-centralist project Wainwright and Mann call “climate X”, borne by the climate justice movement broadly understood. This project is founded on democratic debate and large-scale mobilization of workers, peasants, indigenous peoples and other marginalized and exploited constituencies, to rapidly reduce GHG emissions by means of coordinated boycotts and strikes.

Even though it is based on ideal-types that again crudely simplify the field, such a classification has the merit of capturing truly counter-hegemonic projects based on an

analysis of global class-capital relations, and thus provides a more encompassing view of the field, allowing for alternatives to both the different capitalist projects and the project of world government.

With further analysis, it is possible to delineate middle-of-the-road proposals, representing for their promoters potential compromise positions between pro- and anti-capitalist projects. One set of proposals includes a strong version of ecological modernization founded on local control of low GHG emissions technologies and other technical innovations (e.g. Hajer 1995; Lovins 2010; Newell and Paterson 2010), as well as the project of a “Green New Deal” based on social-democratic interventions addressing environmental destruction and social inequality through redistributive policies within a capitalist political-economy (e.g. Barbier 2010a, 2010b, 2012; Custers 2010; see also Bina and La Camera 2011; Candeias 2013; Jessop 2012; Bullard and Mueller 2012). These two closely related perspectives are sometimes considered as forming together a distinct project that would entail a return to direct regulation of capitalist relations at the national and transnational levels, so as to internalize environmental externalities and at the same time address the ongoing economic crisis through redistributive Keynesian policies (Barbier 2010a; Custers 2010; Tienhaara 2014). This project gathered some traction within the UN and some of its agencies in the years preceding the 2012 Rio+20 conference (e.g. Barbier 2009, 2010b; UNEP 2011), and has been partly implemented in Germany and certain Northern European countries (Candeias 2013; Gawel et al. 2013; Strunz 2014). It is unclear whether the Green New Deal should be considered as a hegemonic project distinct from that of neoliberal green capitalism as some authors claim (Barbier 2012; Bullard and Mueller 2012; Candeias 2013), or if it should instead be viewed as representative of a struggle between the neoliberal and the neo-Keynesian strategic proposals to steer green capitalism. Based on the critical assessment of the outcome of the Rio+20 conference by one of its main proponents (Barbier 2012), the green new deal can be conceived as a project distinct from and competing with that of neoliberal green capitalism and its consort climate capitalism (see also Tienhaara 2014), yet many other authors consider climate capitalism as a single project encompassing neoliberal and neo-Keynesian components (e.g. Lovins 2010; Newell and Paterson 2010;

Wainwright and Mann 2013). Once again, the classification favoured is to a great extent a matter of political preference.

Independently of the exact labels though, the hegemonic side of environmental and climate politics appears to include multiple proposals, as outlined in Table 1. Three of them are consistent with the currently existing neoliberal regime: unfettered capitalist accumulation, a weak climate capitalism founded on minimal neoliberal means of intervention such as carbon markets, or moderate governmental intervention aimed at avoiding structural crises. The fourth proposal is based in neo-Keynesian thinking endorsing a state-led restructuration of the capitalist economy so as to internalize the costs of climate change and environmental destruction, thus implementing a strong version of climate capitalism.

Table 1. Summary of hegemonic and counter-hegemonic tactical positions

| Attitude toward capital | | Attitude toward the state | Projects |
|-------------------------|---------------|--|---|
| Capitalist | Neoliberal | Free-market conservatives (anti-state, total deregulation) | Business-as-usual, carboniferous capitalism, climate Behemoth |
| | | Structuralist (loose market regulation) | Weak climate capitalism, climate Leviathan |
| | | Regulationist (state regulation of markets) | Climate capitalism, Green New Deal, climate Leviathan |
| | Neo-Keynesian | Strong state intervention | Strong climate capitalism, Green New Deal, steady-state economy |
| Anti-capitalist | | Mix of state intervention and local regulation | De-growth, steady-state economy |
| | | State regulation | Ecosocialism, climate Mao |
| | | Local, collective regulation | Commons, climate X |

In many respects, these hegemonic proposals correspond to the main tactical divisions among global capitalists identified by Robinson and Harris (2000). Robinson and Harris find three strategic positions among tenants of neoliberalism: 1) free market fundamentalists, ideologically committed to economic *laissez faire* and minimal state intervention; 2) neoliberal structuralists, the dominant position, seeking to build a light global infrastructure to stabilize the financial system; and 3) neoliberal regulationists, who argue for a stronger regulation of global capitalism to ensure its financial and political stability, and who have been on the rise with the increasing instability of the

neoliberal regime since the late 1990s (Robinson and Harris 2000:46). In terms of climate politics, free market conservatives do tend to adopt a “business-as-usual” position favouring carboniferous capitalism (e.g. ICC 2012; Lomborg 2010; see also International Forum on Globalization 2011, 2013) whereas a certain number of regulationist organic intellectuals (e.g. Friedman 2007; Stiglitz et al. 2009) or IGOs (e.g. AtKisson 2009; UNEP 2011) support stronger climate regulation as part of a Green New Deal. For their part, those IGOs Robinson and Harris identify as neoliberal structuralist such as the International Monetary Fund (IMF) and the World Bank tend to favour market-based regulation such as carbon trading and carbon taxes (e.g. de Mooij et al. 2012; World Bank Group 2011). Undoubtedly, as these projects represent strategic divisions within the capitalist class, individuals and organizations do move back and forth between them. For example, the World Bank, pushed by then chief economist Joseph Stiglitz, has been critical of IMF open market policies in the past (Robinson and Harris 2000:46), although its current climate position is exactly aligned on that of the IMF. Similarly, the ICC generally adheres to free market fundamentalism (Carroll and Carson 2003), although it does give tepid support to carbon markets since its move away from outright global warming denial in the mid-1990s (see ICC 2013). Understanding the different strategic positions and their dynamics will be crucial to interpreting the empirical analysis presented in the following chapters.

Coming back to the various projects present in the field of climate politics, another set of middle-of-the-road proposals more closely relates to the non-capitalist alternatives delineated by Wainwright and Mann (2013). It mainly includes the proposal for a steady-state economy (e.g. Czech and Daly 2004; Daly 1973, 1996) and the closely related de-growth project (Abraham et al. 2011; Latouche 2006; Martínez-Alier 2009, 2012). Briefly, both propose a non-growing form of capitalism, based on very deep governmental reforms in the first case, and leaning more toward a preference for local level initiatives in the second case. Despite a sharp analysis of the ecological crisis and its direct links with the capitalist economy (e.g. Daly 1999; Jackson 2011; Latouche 2006), certain aspects of these proposals have been critiqued as problematic, mainly regarding their ambiguous, and sometimes plainly contradictory, stance toward

capitalism and the fundamental necessity of unfettered accumulation (Foster 2011; Smith 2010). As well, anglo-saxon proponents of this position have been supporting neo-Keynesian green new deal type policies (Czech 2008; Daly 1996; The Green New Deal Group 2008, 2013; Victor 2011), thus suggesting a split between them and the more critical de-growth intellectuals based in Romance language countries¹⁵. This set of positions as a whole nonetheless enjoys some level of support from left-wing activists (D’Alisa et al. 2013) as well as from critical policy analysts and economists (e.g. Knight et al. 2013; Sukhdev 2011; Victor 2010, 2011), and thus may provide a basis for a compromise project that, strategically, does not challenge capitalism directly yet supports certain prefigurative, non-capitalist practices.

This section has presented multiple projects of responses to climate change and environmental destruction, that all bear in different ways on climate politics. I summarize these different projects in Table 1. As the table shows, these projects mainly differ across the two dimensions identified by Wainwright and Mann (2013), that is attitude toward capital and attitude toward the state, although it is possible, as I did, to identify a greater variety of actually existing projects and thus to understand better the complexity of the field of climate politics. With regard to our main focus, the hegemonic project of climate capitalism, this analysis of the climate politics literature reveals two main axes of fracture that transect the capitalist class. First, as neoliberalism is still the dominant regime, different strategic views compete as to how to orient neoliberal accumulation, or how to set the details of the accumulation strategy so as to “get it right” and overcome the climate crisis without too great a destabilization of the economic system. This means using the means of neoliberal accumulation, mostly financial means such as carbon markets and carbon taxes, but which could also involve regulation within certain limits, alongside the pursuit of neoliberal regional, and perhaps global, political-economic integration. However, secondly, in terms of the circuit of capital, the accumulation strategy that has prevailed since the breakdown of the Fordist model in the 1970s itself is starting to be understood by a growing number of capitalists and their organic intellectuals as the source of climate disruption, and proposals for alternatives believed to

¹⁵ Richard Smith, personal communication, March 26, 2014.

be more stable are emerging within hegemonic discourse. Thus, the projects that compete on this level are proposals for different accumulation strategies: neoliberal strategies *versus* neo-Keynesian strategies. Where does climate capitalism stand? I would argue that it stands at the edge of neoliberalism and neo-Keynesianism: although, as I showed above, its main impetus so far has been fundamentally neoliberal, some of its proponents believe it can be reshaped into a more strongly regulatory regime which would be able to address climate change effectively.

Synthesis and critical assessment

This chapter had two aims. First, it sought to present the historical emergence of climate capitalism and its position within the structure of the field of climate politics, so as to be able to capture its specificity in relation to other hegemonic projects. The discussion revealed a complex and evolving field where capitalist and non-capitalist projects involving different degrees of governmental centralization and intervention, interact together. As I discussed in the first section of this chapter, the strength and appeal of climate capitalism and other projects vary in time: climate capitalism nearly overcame carboniferous capitalism between the mid-1990s and the end of the decade 2000, under the global institutional framework of the Kyoto Protocol (see Levy and Spicer 2013). Now, this institutional anchoring, although still embodied in the FCCC, has been considerably weakened after the failure of the Copenhagen conference to extend the protocol in 2009. Following from the impasse reached in international negotiations, carboniferous capitalism re-emerged, particularly in the United States (Levy and Spicer 2013; see also McCright et al. 2014; McCright and Dunlap 2010) but also in Canada and Australia (Davidson and Gismondi 2011; Haluza-DeLay 2012; Nikiforuk 2010; Young and Coutinho 2013), while other projects seeking to de-grow the economy and to reclaim the commons started reaching out to a broader public (D'Alisa et al. 2013; Martínez-Alier 2012). At the same time, climate capitalism as a project remains internally contested, with the neo-Keynesian section of its constituency seeking a greater involvement of national and transnational regulatory agencies, whereas the neoliberal section holds on to the fundamental precept of delegating authority to corporations and NGOs and accepts state intervention only to provide the stability required for smooth

accumulation. Still, beyond these divisions, climate capitalism as a whole is cemented around its determination to subsume relations with the territory under the logic of accumulation, which concomitantly renders it incapable of tolerating any proposal that would undermine economic growth and the globalization process. As of now, the future of climate capitalism is open as all its proponents prepare for the Paris 2015 Conference of Parties (COP), in the hope that some form of new international agreement will be reached.

Second, this chapter also sought to draw attention to the discursive KPM processes at play in climate politics. Through these processes, organic intellectuals constitute the field in various ways, from conceptually reconciling environmental protection and economic growth to constructing classifications of the actors and projects engaged in the struggle for domination. Acquiring a relative autonomy from their context of production, these categories then become themselves forces that contribute to structure the field and orient its further evolution (Bourdieu 1991; Dryzek 2013). Powerful actors present in a field are able to determine not only which items will or will not figure on the political agenda but the very categories of language through which other actors think of themselves and their position in the field. It thus becomes crucial to examine the processes through which power is exerted at such a structural level (Carroll 2004; Lukes 2005). This is where the Gramscian perspective informing this work diverges from the neo-pluralist, neo-institutionalist, and even neo-Gramscian approaches found in the majority of the literature on climate capitalism. Beyond empirically identifying the actors present, the alliances they build among each other, and the amount of influence that they each manage to accumulate, this approach enquires into the relations of power through which actors construct the field in which they are embedded, which in turn constructs them.

The following chapters will be guided by such a Gramscian perspective. I will develop an analysis of some of the processes of structural power at play in climate politics, using the empirical methodology of power structure research introduced above. This empirical methodology, founded on social network analysis, allows us to identify the actual actors, corporations and other organizations, involved in climate politics as well as the relationships that tie them together and that form the organizational basis for climate

capitalism to become entrenched into a new historical bloc. This goes beyond the theoretical and discourse-based definitions of groups that I outlined above, into investigation and mapping of actually existing relations between actors and organizations (see Bourdieu 1991: Ch. 11). Chapters four and five present the result of that empirical analysis. However, I must first introduce the main organizations on which this study is based, the climate and environmental policy groups (CEPGs) that are at the heart of climate capitalist KPM. This is what I do in the next chapter, with an emphasis on the specific variant of the climate capitalist project each organization elaborates, through discourse and practices, and where each one fits in the classification outlined in Table 1 above.

Chapter 3. Corporate knowledge production and mobilization organizations and climate politics

Introduction

As I explained in the previous chapter, global corporate elites are deeply engaged in a struggle for the reorganization (or orderly reproduction) of the neoliberal political-economic regime. Various hegemonic projects compete in the field of climate politics, each elaborated by different sets of actors of the capitalist class, who are all engaged in processes of knowledge production and mobilization (KPM). Think tanks and policy-planning groups constitute a major element of the hegemonic KPM apparatus, funded by corporations, private foundations and wealthy members of the elite to elaborate these hegemonic projects, including that of climate capitalism. These specialized organizations channel corporate power in multiple ways, firstly through their KPM activities that contribute to defining the terms of the debates but also, importantly, by bringing the corporate elite closer together and providing places where strategy in response to crises of capitalism may be coordinated.

The analysis I present in the rest of this dissertation starts from a purposive sample of eleven climate and environmental policy groups (CEPGs) active in climate capitalist KPM. These eleven CEPGs will provide the starting point for mapping out, in chapters four and five, the constellation of organizations and individuals that participate in the construction of climate capitalism as a hegemonic project. But before this, it is necessary to introduce each CEPG and discuss the criteria on the basis of which they were selected. The first section of this chapter explains the sample selection method. The next section introduces at length each CEPG and discusses their specific discourses and action repertoires. The last section presents a general analysis of these discourses and practices, relates them to the different corporate strategic positions introduced in Chapter 2, and reflects on how they contribute to the project of climate capitalism.

Sample selection

I sought to include in the study the most important policy-planning groups active in climate capitalist KPM on the global scene. Thus, the eleven CEPGs that constitute the

basic sample were selected according to two criteria: 1) they are transnational in scope, in their reach and their mandate, and 2) they have a core function of KPM supportive of either climate capitalism, or green capitalism more generally with climate change as a core issue. I specifically excluded: industry associations, that serve slightly different purposes than policy groups, strictly national-level groups, as the topic of the study is specifically the transnational elite, and groups that were inactive at the time of data collection, at year end 2010. Table 2 provides basic information about the policy groups making up the sample. Nine of these eleven groups were identified on the basis of the global climate politics literature¹⁶. To ensure maximum inclusivity, the *Yearbook of International Organizations (YBIO)* online database, edited by the Union of International Associations (UIA 2012), was used to identify organizations with similar characteristics by conducting searches on the *YBIO* keywords “climatology” or “sustainable development” and “business enterprise”; two groups were added to the sample after reviewing the lists thus generated¹⁷. Due to the changing nature of the field, one of the groups in the sample now has a new vocation, as indicated below, and new groups have most certainly appeared since the initial sampling took place at year end 2010.

All the groups included in this sample intensively lobby governments and UN agencies involved in the international climate negotiations to promote climate capitalism, and participate in the yearly COPs by sending representatives and holding side-events addressed to corporate managers and policy-makers (Corporate Europe Observatory 2000; Tansey 2013). As well, by virtue of their organizational structure they function as places where the corporate elite and other elites can meet, plan strategy, forge consensus

¹⁶ The three policy-planning group the most frequently mentioned in the climate politics literature, the Global Climate Coalition (GCC), the Climate Council, and the International Climate Change Partnership (ICCP), were not included in the study. The first two staunchly opposed the climate capitalist project while they were active (1989 to about 2002) (Brown 2000; Levy and Kelley 1997; Vormedal 2008). The ICCP, despite being one of the early climate capitalist groups, founded in 1991, appears to have been inactive for many years. Although it still had an online presence at the time of writing, its website appears to have been last updated on March 2, 2008 (ICCP 2008).

¹⁷ The 2012 edition of the *YBIO* lists 21,670 active international non-governmental organizations (UIA 2012: Appendix 3). It includes organizations whose aims and membership are international in character. The editors seek to maintain as broad a coverage as possible, although they recognize that it may not always be possible in the case of non-conventional organizational forms, such as conference series, organizations without a permanent secretariat, or religious orders (UIA 2012: Appendix 5). As I am interested in listing organizations with a conventional form, I take the *YBIO* to provide a reliable listing of international organizations of interest to complement the list already identified on the basis of the climate politics literature.

on key issues, and create a sense of community around the climate capitalist project. However, as I will describe below, each CEPG specializes in specific aspects of KPM work and thus occupies a slightly different niche in climate capitalism's organizational ecology, i.e. the variety of organizational forms and specializations present in the field (Hunt and Aldrich 1998). As indicated in Table 2, the main distinction is that between groups that are dedicated strictly to climate capitalism and those that address climate change as part of the more general project of green capitalism. As I explained in Chapter 2, climate capitalism and green capitalism mesh together very closely, and hence some corporate policy groups take a multi-issue approach that addresses from a neoliberal, green capitalist perspective different aspects of environmental degradation, side by side. In a study of climate capitalist KPM, it is essential to consider such groups alongside those dedicated strictly to climate issues.

Table 2. Climate and environmental policy-planning groups

| Name (acronym) | Year est. | Headquarters | Membership | Agenda |
|---|-----------|--------------------------|--|--|
| <i><u>Climate capitalist groups</u></i> | | | | |
| Business Council for Sustainable Energy (BCSE) | 1992 | Washington, DC (USA) | US non-coal, non-oil energy sector ^a | Promotion of alternative energy to address energy security concerns |
| European Business Council for a Sustainable Energy Future (e5) | 1996 | Karben (Germany) | European non-coal, non-oil energy sector ^a | Promotion of alternative energy to address climate change |
| Center for Climate and Energy Solutions (C2ES) | 1998 | Arlington, VA (USA) | Group of scientists, bankers and venture capitalists | Scientific and business case for carbon markets |
| International Emissions Trading Association (IETA) | 1999 | Geneva (Switzerland) | Over 150 large TNCs | Establish a global carbon market |
| Global Climate Forum (GCF) | 2001 | Berlin (Germany) | Forum of scientists and corporate elites | Scientific case for carbon markets |
| The Climate Group | 2003 | Woking (UK) | Alliance of corporations and municipal and state/provincial governments | Provide tools to transition to climate capitalism |
| Copenhagen Climate Council (CCC) | 2007 | Copenhagen (Denmark) | Alliance of high profile CEOs | Climate change as a business opportunity |
| <i><u>Green capitalist groups</u></i> | | | | |
| Club of Rome | 1972 | Winterthur (Switzerland) | 100 high-profile global elites, including scientists and corporate heads | Stimulate debate about global issues, including environmental issues |
| Global Environmental Management Initiative (GEMI) | 1990 | Washington, DC (USA) | About 25 US TNCs | Promotion of environmental management, provide environmental management tools |
| World Business Council for Sustainable Development (WBCSD) ^b | 1996 | Geneva (Switzerland) | About 200 of the largest TNCs, represented by their CEOs | Promotion of sustainable development and market-based regulation |
| United Nations Global Compact ^b | 2000 | New York (USA) | Representatives from business (12), labour (2), NGOs (4), and the UN (2) | Promotion of corporate social responsibility, including environmental responsibility |

^a Sectors represented range from renewable energy (solar, wind, geothermal and hydro-electric) to natural gas and nuclear.

^b Source: Carroll and Sapinski (2010).

Presentation of the policy groups

This section details each group's specific agenda, in terms of their self-determined goals and mission, as well as their organizational form, the constituencies they purport to represent, and their action repertoire. I also discuss each group's general strategic orientation using the categories delineated by Robinson and Harris (2000) and introduced in Chapter 2. Briefly, Robinson and Harris discern three political economic strategic positions within the neoliberal discourse. *Free-market conservatives* are ideologically attached to economic *laissez-faire*, i.e. non-interventionism by the state. The GCC and the Climate Council were early representatives of this orientation, in that they sought to avoid any regulation of GHG emissions, national or global, and asserted that the free market alone should determine what climate actions are taken or not. Free-market conservatism clearly favours a carboniferous capitalist regime and the economic interests of large fossil fuel corporations, whose profitability would in this framework be solely determined by the supply and demand for their products. At the other end of the spectrum, the *neoliberal regulationist* orientation, while still supporting neoliberal precepts, recognizes that certain inequalities and environmental impacts ensuing from market deregulation may threaten the overall stability of the regime. Hence, it argues for a stronger regulatory apparatus that would both stabilize the financial system and mitigate global capitalism's sharpest social and ecological contradictions in the interest of political stability. In the case of climate politics, this position would be compatible with regulation of GHG emissions by means of carbon markets or carbon taxes, state regulations that steer markets in a certain direction but do not entail direct regulation of emissions. Yet, according to Robinson and Harris, neoliberal regulationists stop short of being neo-Keynesians, who in addition to increased political intervention also support a broad program of state-led wealth redistribution and re-orientation of investments toward less ecologically harmful projects (Robinson and Harris 2000:43, 46), as explained in Chapter 2. Finally, the *neoliberal structuralist* strategy stands somewhere in-between, and seeks to stabilize global accumulation through a minimum of political regulation and centralization, mainly to protect financial institutions from failure during times of crisis. It thus differs from the regulationist approach, in that it does not seek to address

potentially destabilizing inequalities or ecological destruction but limits interventions to times of crisis, to avoid the complete breakdown of global capitalism¹⁸. However, unlike free-market conservatives, structuralists do believe that state intervention is required in such cases (Robinson and Harris 2000:43, 45). The structuralist position would support a mixed approach to GHG emissions reduction, combining state-organized carbon markets with corporate-led voluntary approaches – including voluntary carbon markets – following principles of corporate social responsibility (CSR). It is important to note that I use this classification in this chapter as a tool to understand where CEPGs, and concomitantly the different versions of the climate capitalist project they each produce, stand relative to each other and to the neoliberal regime as a whole. The reader must keep in mind that these are fluid categories laid out over what is more likely a continuum of possible positions, and that groups and individuals frequently move from one to the other (see Chapter 2). As I will now explain, based on their level of support for global political and regulatory structures such as global carbon markets and investments in renewable energy, the vast majority of CEPGs adopt a neoliberal structuralist strategic orientation, although some oscillate between structuralist and regulationist approaches.

Business Council for Sustainable Energy

The Business Council for Sustainable Energy (BCSE) is a corporate elite forum and lobby group founded in 1992 in the United States¹⁹. It regroups energy companies involved in natural gas, wind, solar, hydro and geothermal electricity generation, as well as from the energy efficiency and insulation sectors. It originally comprised mostly small companies and industry associations, the vast majority of them located in the US, but with time some larger players engaged in these sectors joined its membership (see Levy and Egan 2003:822). The BCSE's membership is still completely American except for a handful of US subsidiaries of European TNCs. Because of the sectors that make up its membership, the BCSE can be said to represent interests that make up the “leading edge” of climate capitalism, namely energy producers competing against oil and coal as sources

¹⁸ As in crisis-intervention initiatives that followed the 2008 financial meltdown.

¹⁹ Unless otherwise indicated, the descriptions that follow are based on information found on each organization's website, consulted in April 2012. References are provided in the case of specific publications by each CEPG.

of energy, who thus have a direct stake in a transition away from these fuels. As such, its activities focus on the promotion of non-oil and non-coal fuel energy sources and of energy efficiency, all of which are framed as drivers of economic growth, global competitiveness and job creation, and as responses to energy security concerns. In its documents, the BCSE insists on the job creation potential of “clean energy” and energy efficiency as well as on its lower cost, either the negligible input costs of solar, wind, and hydro or the low building cost of natural gas facilities. In terms of energy security, it promotes clean energy and energy efficiency to keep energy costs low while addressing growing demand, to reduce the United States’ dependence on imported energy, and to improve the reliability of energy systems (BCSE 2013). It is interesting to note that, likely because of the controversial potential of climate change-centred arguments in the US context, the BCSE’s case for moving away from oil and coal is not built at all around the need to address global warming as an issue, but only around these two themes of economic growth and energy security.

As to its strategic priorities, the BCSE seeks to open and develop markets for clean energy and energy efficiency. For this, it lobbies for the adoption of favourable policies at the state, US federal, and international levels, where it supports investments in natural gas, renewable energy and energy efficiency, and the implementation of mandatory carbon markets. As for addressing global warming, the BCSE supports market-based approaches and partnerships with the private sector for industry reporting and monitoring of GHG emissions. In general, it uses the discourse of ecological modernization, promoting technological fixes and a market-based approach to global warming (Levy and Egan 2003).

At first glance the BCSE might not appear to be primarily global in scope due to its strictly US membership, but it does nonetheless play a key role in supporting climate capitalism as a transnational project. As Carroll (2013) argues, the relationship between national and transnational accumulation is complex, and the two levels cannot be easily disentangled. Indeed, transnational capital is also nationally based, for a large part in the United States. The US constitute the largest national market for many TNCs, based in the US and elsewhere, and the large number of interconnections between the US government

and US-based transnational capital is evidence that the US “state-capital nexus” is dominated by the (nationally-based) transnational section of US capital (van Apeldoorn and de Graaff 2012; see also Cox 2013). Thus, in the case of the BCSE, I would argue that 1) its membership is made up of corporations that are global in nature and who mainly seek opportunities on the global market, of which the United States comprises a large section; 2) the national competitiveness and energy security discourse is opportunistic, and the competitiveness aspect must be understood as an attempt of these firms to position themselves in the global market, which depends in large part on favourable US federal policies; 3) globally oriented organizations are very much present in Washington, D.C., simply because of the major role of the US government in neoliberal globalization and its power to influence global policy. It thus seems that the BCSE represents not merely national interests but interests that are congruent with the global expansion and integration of capitalism.

In terms of strategic orientation, the BCSE’s sustained insistence on global growth, competitiveness, national job creation, and energy security exemplifies a neoliberal structuralist approach. The general picture that emerges from its online documentation is that of a lobbying organization that seeks to open up opportunities for its members through the creation of new markets within the existing framework of minimally regulated neoliberal capitalism. It does not appear ideologically attached to doing away with governmental regulation at all levels; its arguments rather suggest a keen awareness of the importance of market-supportive governmental policy. But it does not hint either at the need for increased regulation of global capitalism or of environmental issues through state intervention. As a whole, the BCSE can be seen as an opportunistic alliance of US corporations wanting to expand their markets by using global warming, competitiveness and energy security concerns to lobby for favourable policies. However, this is precisely how many tenets of climate capitalism frame global warming: in a free-market neoliberal framework, certain policy changes would encourage low emissions technologies by supporting the expansion of markets for them, and investment patterns would reorganize themselves not because of any belief in the importance of addressing global warming but simply because of the interplay of economic interests.

European Business Council for Sustainable Energy

The European Business Council for Sustainable Energy (e5) is a sister organization of the American BCSE. It was established in Germany in 1996 under the name of European Business Council for a Sustainable Energy Future, shortened to its current name around 2005. Its creation followed from discussions at the first COP that took place in Berlin in 1995 between the renewable energy and energy efficiency consultant firm Ludwig Bolkow Systemtechnik (LBST), and two NGOs, the Worldwatch Institute and Germanwatch. Like the BCSE, it acts as an umbrella organization for the renewable energy and energy efficiency sector. But, whereas the BCSE focuses mainly on lobbying, e5 adopts a broader approach. It acts as a corporate, political and scientific regional elite forum, with the goal of “advancing knowledge exchange and mutual understanding between business, science, civil society and policy-makers”²⁰. It also acts as a think tank and discourse producer, putting out reports detailing different aspects of its project and participating in and organizing conferences and COP side-events.

The project of e5 is similar in content to that of the BCSE, although it frames the question of business and renewable energy slightly differently. The acronym “e5” stands for economy, efficiency, environment, energy, and employment, which are claimed to represent the five dimensions of sustainability. Thus, its discourse emphasizes linking economic growth and employment to address the ecological and climate crisis through improving energy efficiency and creating markets for renewable energy, in perfect line with the ecological modernization discourse. However, e5’s discourse goes further than the BCSE’s position as it constitutes “business” as a fundamental entity in itself. It emphasizes the role of the corporate world in promoting resource efficiency through innovation, and generally presents business as the main protagonist in advancing sustainability, united behind e5’s ecological modernization project. The European context allows more flexibility on this front; hence, e5 insists pointedly on the necessity to address the environmental crisis, and in particular climate change, which provides the main argument for its advocacy of state-supported renewable energy markets expansion. The theme of climate change is integrated through e5’s “climate is business” slogan,

²⁰ Source: www.e5.org/modules.php?op=modload&name=PagEd&file=index&topic_id=0&page_id=65, consulted April 4, 2012.

addressed to the corporate community to convince it to rally behind the climate capitalist project. Thus, e5 works at the nexus between governments and corporations, trying to reach out to both constituencies and to convince them to embrace the climate capitalist option. Interestingly, e5 appears to be trying to attract support from the environmental movement as well by appropriating some of its vocabulary. Thus, its website speaks of “terminat[ing] the global overexploitation of our ecological resources”²¹, and incorporates the expressions of “climate justice” and “the commons” – longtime slogans of grassroots environmental activism. In e5’s discourse though, “climate justice” is reduced to the principle of differentiated responsibility for historical GHG emissions, and “the commons” solely refers to new opportunities to increase profits by tapping on the possibilities of open access intellectual property licenses. The appropriation of these expressions thus suggest a will to reach out to more militant sections of the environmental movement.

In sum, e5’s discourse is in its essence very close to that of the BCSE. Like its sister organization, it offers another example of the neoliberal structuralist strategy that lobbies governments to create favourable market and regulatory conditions for the diffusion of energy efficient innovations, which are presented as key levers in addressing climate change and environmental degradation while they increase productivity and profitability.

Center for Climate and Energy Solutions

The Center for Climate and Energy Solutions (C2ES), founded in 1998 as the Pew Center on Global Climate Change, is steered by a small board regrouping top- and second-tier managers mostly from the energy sector. It was founded by Eileen Claussen, former US Assistant Secretary of State for Environmental Affairs and negotiator at the climate change negotiations, as an alternative to the carboniferous capitalist Global Climate Coalition (Pulver 2003:21). Although the C2ES describes itself as a think tank, its activities also involve lobbying government officials in Washington and internationally, and policy planning and elite consensus making. As to the latter, its board is made up of several scientists and finance capitalists and thus bridges between climate

²¹ Source: www.e5.org/modules.php?op=modload&name=PagEd&file=index&topic_id=0&page_id=7, retrieved April 4, 2012.

science and financial interests, while benefiting from scientists' prestige to provide legitimacy for the climate capitalist project. In 1998, the C2ES also set up a Business Environmental Leadership Council (BELC) which regroups large transnational corporations headquartered in the United States and Europe²². BELC membership is by invitation only, and the C2ES website extensively showcases actions taken by member companies to improve their energy efficiency and address climate change, as a way to demonstrate the direct benefits to corporations of climate capitalism and ecological modernization, and to foster greater corporate support for the project. For this purpose, the C2ES describes itself as a nonpartisan source of information and analysis that can bridge between a diversity of interests.

The C2ES's agenda and discourse are generally very similar to that of the BCSE and e5. It lobbies for reducing GHG emissions through legislation that would support market approaches, as it believes that voluntary action alone is not sufficient to address climate change. It thus positions itself against free market conservatives who only go so far as to support voluntary action, when they are not engaged in flat out denial, but does not either promote direct regulation of GHG emissions at the source or a program of massive governmental investment as would a regulationist approach. What is distinctive in C2ES's strategy is the attempt to bring elites from different sectors together, including high level scientists, and the related resort to scientific evidence and economic modelling to make the case for the climate capitalist project. In that matter, its activity is closer to that of a pure think tank. However, its insistence on fostering "business engagement" and on business as "leaders" reveals its consensus-making work around the climate capitalist project, at the same time as it helps reproduce and disseminate the discourse according to which corporations are the main, if not only, protagonists in the climate transition narrative.

International Emissions Trading Association

The International Emissions Trading Association (IETA) was founded in 1999 by a group of TNCs, with initial support from the World Business Council for Sustainable Development (WBCSD), the UN Conference on Trade and Development (UNCTAD)

²² Thirty-one at the time of writing (June 2014), down from 56 in 2010.

and the Earth Council. Based in Geneva, it is organized as a global business association with a membership of over 150 companies, and is steered by a board of 18 directors, most of them second-tier managers from member corporations. Its policy activities, conducted mainly through eleven working groups focusing on different regions and topics, promote carbon markets as the best means to address climate change without disrupting capital accumulation. The IETA seeks to bring together national and international regulatory emissions trading frameworks, with the longer-term goal of linking existing markets into a single global market.

Its discourse is generally in line with that of the groups described above, although the IETA's emphasis is not so much on arguing for the political involvement of the corporate community, but rather on promoting carbon markets in themselves. In addition to lobbying governments at different levels, it focuses mainly on building capacity for implementing carbon markets by producing documentation and providing training on GHG emissions accounting, so as to facilitate firms' integration into voluntary or state regulated markets. In that same vein, the IETA does technical work and produces reports analyzing the functioning of carbon markets in different parts of the world and the business opportunities they represent so as to help its members to take advantage of them.

Thus, although its activities integrate the ecological modernization precepts of climate capitalism, the IETA does not work to develop this discourse as such. Instead, it exemplifies a much more practical orientation toward supporting its members and the corporate world in general to profit from the accumulation opportunities opened up by newly established carbon markets. In this sense, its KPM activities are oriented inwardly toward its member corporations instead of targeting the corporate world as a whole or the general public. Similarly, the IETA goes a step further in its policy work as, in addition to lobbying for the implementation of carbon markets, it looks at how to make them more functional and how to integrate them globally so as to maximize their effectiveness to support capitalist accumulation. Thus, the IETA appears as a neoliberal structuralist group: its work advocates regulating GHG emissions through market mechanisms, which

nonetheless ought to be put in place and enforced by governments as well as by industry self-regulation.

Global Climate Forum

The Global Climate Forum (GCF) was founded in 2001 as the European Climate Forum, and rebranded itself as “global” in 2011. It has developed a discourse and a strategy that are in many ways similar to those of the C2ES, drawing on scientific and economic expertise about global warming to inform climate policy. The GCF was formed to function both as a think tank and research centre as well as a forum to link between economics research, climate politics and the climate capitalist project, and is more anchored in the field of research than any other CEPG. Its membership, in vast majority located in Europe, comprises individual researchers, diplomats, and businesspeople, as well as corporations, business associations, environmental NGOs, and government bodies. Its project differs somewhat from that of other CEPGs, in that it does not promote carbon markets as such. It rather describes itself as a research organization whose interest is not in reaching consensus on a single line of action but in exploring a multiplicity of options to inform policy-making. Research conducted at the GCF employs economic and risk modelling methodologies to address a variety of topics, including climate change impacts, the links between climate change and the economy, GHG regulation policies, climate change mitigation technologies, and climate related risk management. However, despite the GCF’s stated neutrality as to the best policy option, the general framework within which it functions strongly supports a European “green growth” agenda, founded on ambitious GHG reduction targets that would spur increased investments in energy efficiency and other technologies (e.g. Jaeger et al. 2011). In its online material, the GCF makes it clear that it seeks to bridge between academic research on climate change adaptation and mitigation on the one hand, and corporate initiatives to reduce emissions such as developing energy efficient technologies and emission trading schemes on the other. Within the corporate sector, it engages systematically with energy industries and major energy users, companies engaged in renewables, and insurance and financial firms, all sectors that have a direct stake in climate capitalism.

The GCF thus provides us with a window on hegemonic academic work. Its main project is to define a research agenda that is supportive of climate capitalism, together with corporate elites and with the help and legitimating capacity of sympathetic NGOs²³. In this way, its KPM activities can be seen as a form of participatory research on behalf of the climate capitalist corporate elite. This role is crucial for the advancement of the project and the strengthening of a supportive coalition. For one, it provides climate capitalism and the green growth agenda with the legitimacy of apparently disinterested scientific research based on climate and economic modelling methodologies, which in reality represents a single approach to research by scholars from a single discipline: neoliberal economics. These scholars nonetheless frame their work as representative of rigorous scientific research in general, as is characteristic with hegemonic KPM²⁴. Secondly, the work of the GCF provides material to delineate and evaluate different strategic options and governance technologies available to address the climate crisis within the confines of the neoliberal regime. Thus, given its project, the GCF does not stand firmly with a single strategic position. Rather, the documents it produces and organic intellectuals who participate in its activities represent multiple strategies within the boundaries of neoliberal structuralist or regulationist discourse.

The Climate Group

Launched in 2004 in collaboration with then UK Prime Minister Tony Blair, the London-based Climate Group works in a slightly different register from the CEPGs described up to now. Like them, its discourse is focused on addressing climate change through ecological modernization. Under the slogan “the clean revolution”, it promotes non-fossil fuel energy sources, energy efficiency, and other technological fixes as solutions to the climate crisis as well as sources of profits, economic growth and employment. However, the Climate Group’s distinctive activity is to develop on-the-ground demonstration projects in partnership with national- and local-level governments and organizations. These projects consist in testing and then scaling up deployment of

²³ At the time of data collection (end of year 2010), GCF board members included representatives of the World Wildlife Fund (WWF), Greenpeace International, Germanwatch, and the Wuppertal Institute for Climate, Environment and Energy.

²⁴ As for example the functioning of the Mont Pèlerin Society, which played a crucial role in the inception of neoliberal thought since the late 1940s, as described in Mirowski and Plehwe (2009).

energy efficient technologies. For example, the Climate Group set up a project that documented the actual performance and commercial potential of light-emitting diode (LED) public lighting in ten major cities. This pilot study was followed by the publication of a general report, city-specific reports, and technical reports for city lighting managers. A scaling-up of the pilots followed, together with lobbying action to convince state and city governments worldwide to adopt broad-scale LED lighting. Such integrated work represents another key aspect of promoting the climate capitalist model. It demonstrates the concrete efficiency potential for energy-saving technologies, thus providing documentation to support lobbying efforts, and at the same time directly developing markets for such technologies. Moreover, partnerships forged with municipal and other governments in the course of the realization of this project and others are used as foundations to broaden the support base for climate capitalism. This work of bringing together policy-makers from multiple governance levels and creating a sense of collectivity around the idea of the “clean revolution” distinguishes the project of the Climate Group from other CEPGs. Such efforts constitute a major part of building a strategic consensus among climate capitalist actors at all levels.

As to its geographic scope, the Climate Group is one of the few CEPGs active outside the North Atlantic region. It has established partnerships and conducts projects in India, China and Australia, and maintains offices in the UK, continental Europe, the US, India, China and Australia. An important part of its work is to promote the climate capitalist project to other major GHG emitter countries, so as to gather their support in the hope of fostering adherence to a global agreement to reduce GHG emissions.

The Climate Group is one of the few CEPGs that leans toward a neoliberal regulationist strategic approach. Although it does not feature regulation of global capitalism as part of its core project as would a neo-Keynesian approach, it clearly supports a global and binding GHG reduction agreement. As well, one of its projects involves improving access to solar and wind power in rural India, so as both to improve a marginalized constituency's quality of life and to create markets for these technologies.

Copenhagen Climate Council

The short-lived Copenhagen Climate Council (CCC) was created in 2007 by Danish think tank Monday Morning with the specific project of bringing the corporate community together in preparation for the 2009 Copenhagen Climate Summit (COP 15). It faltered shortly after the summit. The CCC was organized as an elite forum of top executives from some of the largest transnational corporations, elite scientists, and high-ranking policy-makers. Its agenda was two-fold. First, it sought to foster support from the corporate sector for a new international treaty founded on carbon markets, by convincing them of the benefits of climate capitalism in terms of profit opportunities and avoiding the risk of climate disruption. Second, it aimed to convince governments to agree on a treaty that would involve ecological modernization measures, including a long-term framework to price carbon through emissions markets or taxes, and a commitment to increased investments in renewable energy and energy efficiency improvements. The CCC's tactic to achieve these goals was to produce texts, including a manifesto, addressed to policy-makers and the public in general that would make the case for climate capitalism and present the corporate community as united behind such a project (see Copenhagen Climate Council 2007; Copenhagen Climate Council and PricewaterhouseCoopers LLP 2009). It also participated, together with other major climate capitalist organizations, the Climate Group, the UN Global Compact, the WBCSD and the World Economic Forum Climate Change Initiative, in organizing a large-scale business summit in preparation for COP 15, where a large number of corporate officers from major TNCs met and developed a common position to present COP negotiators. As a whole, the CCC drew on the prestige and position of its members to foster business unity and thus add weight to political negotiations.

The CCC's discourse can be characterized in two ways. On the one hand, its insistence on the role of the state in creating favourable conditions for investment in renewables and in energy efficiency, and on the compatibility of climate action and economic growth, suggests a neoliberal regulationist strategy. On the other hand however, like the C2ES, it reiterates the fundamental neoliberal narrative that presents "business" as *the* fundamental transformative force; business is united in its vision for a "low carbon

future” but restricted by the inaction of governments, and it will be able to create a “better future” once provided the long-term certainty and initial capital it needs. This insistence on the constraining role of the state and on business as the sole protagonist of social change would rather suggest a neoliberal structuralist strategy. Thus, as with many CEPGs, the CCC’s strategic approach appears to oscillate between the neoliberal regulationist and structuralist strategies.

Club of Rome

The Club of Rome is the oldest CEPG considered in this study, and the only one that predates the neoliberal era. It was founded in 1968 by a small group of globally oriented elites from the political, corporate and academic fields concerned with rapid population growth, increasing resource depletion and early processes of economic globalization. Today, it still frames its work around a deep concern for these issues and the increasing degradation of the global environment that its work documents. The Club of Rome is constituted as a global elite forum and counts several high-ranking capitalists among its members, alongside intellectuals, retired heads of state, and European monarchs. Its assembly, taking place once a year, functions as a meeting place for these people. Complementing the Club of Rome’s global presence, national organizations have been formed over the years in about 30 countries. These national groups organize conferences and stimulate exchanges so as to bring the Club of Rome’s perspectives to bear among local academics and other elites.

The Club of Rome’s general activities are more research oriented. It functions as a think tank and sponsors reports of analyses of planetary-scale issues, its most famous publication being the *Limits to Growth* report (Meadows et al. 1972) and its subsequent updates (Meadows et al. 1992, 2004)²⁵. In its intellectual orientation, it adopts a perspective that attempts to delineate likely historical trajectories using analyses that integrate complexity science and mathematical models of the earth’s future with more qualitative, forward-looking reflexions. In the vein of the *Limits to Growth* report, such studies emphasize the finite nature of the biosphere in its various manifestations, and the

²⁵ See also Randers’ (2012) sequel book outlining a series of forecasts for the future of humanity.

need for a transition away from unfettered growth and toward a more just redistribution of wealth.

In terms of specific proposals, publications sponsored by the Club of Rome emphasize first, technological changes to improve energy and resource efficiency (e.g. Wijkman and Rockström 2012). These changes, that go much beyond simply adapting existing production processes, are to issue not from large corporations but from local entrepreneurship, as large corporations cannot, because of their structural constraints and managerial culture, respond adequately to the challenges posed by climate change and other forms of environmental disruption (Pauli 2010). Second, publications promote various political changes, such as replacing GDP by new indicators of development, implementing tax reforms to incite investment in more efficient production technologies, and pricing ecosystem services (Wijkman and Rockström 2012). At the international level, the Club supports a democratic reform of international institutions and the UN structure to respond to currently changing socio-environmental conditions (Kanninen 2013). Finally, proposed changes in the economic realm include implementing different business models based on a long-term perspective. For example, the proposal to reorganize the economy in the form of a “circular economy”, in which products are designed to be reused, refurbished and recycled from the onset, goes beyond simple ecological modernization projects elaborated by other CEPGs (Wijkman and Rockström 2012).

In sum, the Club of Rome’s goal is to understand the “root causes of the systemic crisis” and to delineate a “new economy” that would be sustainable and provide well-being and sufficient income for all. In its publications, the Club of Rome considers climate change as a crucial part of the crisis, although it is always seen as one aspect of a more complex array of problems (see e.g. Kanninen 2013; Randers 2012; Wijkman and Rockström 2012). Climate change is viewed in terms of the limits to growth framework: its causes are linked to unrestricted economic growth, and great emphasis is put on the urgency of the issue and the need for rapid and drastic change in production and political structures.

Concepts of full employment, tax reform and market regulation discussed in the publications it sponsors make the Club of Rome the only CEPG deviating from the neoliberal discourse, clearly proposing a neo-Keynesian approach to sustainability and climate issues. However, although its discourse goes much further on this account than that of other groups, it still remains within a global technocratic managerial perspective that considers the earth as a “system” to be organized by the ruling elites. Thus, despite a detailed and systemic understanding of the causes of environmental degradations and climate change, and of the shortcomings of existing economic and political systems, proposals for reform are mostly aimed at decision-makers and corporate executives, in a causal model of science informing policy-making. Nonetheless, there is space in the Club of Rome’s discourse for proposals that encourage grassroots change, as in Pauli’s (2010) idea of a “blue economy” that focuses on individual socio-economic innovations in the production process. Thus, the Club of Rome’s political scope covers a broad array of measures compatible with a neo-Keynesian orientation.

Global Environmental Management Initiative

The Global Environmental Management Initiative (GEMI) addresses issues of environmental management, environmental health and safety, and sustainability. It does so by designing tools that “help companies improve the environment, their operations and add business value”²⁶, by allowing firms to measure their progress in each area. The GEMI regroups about 25 member TNCs, all of them based in the United States, and is steered by a board of directors made up of second-tier managers of member companies, advised by a council of senior corporate executives. Like other CEPGs, the GEMI’s KPM activities are organized on the model of a think tank, and involve producing documentation, and organizing meetings and other networking activities. Given its particular focus, the networking activities it organizes are presented as opportunities for corporate representatives to share best practices and to exchange information about emerging issues, such as new GHG reporting rules, carbon accountancy and the like. The bulk of GEMI’s work is to develop, in partnership with member and other corporations or with NGOs, tools that are then promoted and made available for free for companies to

²⁶ Source: www.gemi.org/AboutGEMI.aspx, consulted April 4, 2012.

use in their strategic planning. This is said to help them integrate sustainable practices, at the same time as it increases their competitiveness by improving production efficiency and increasing regulatory compliance, in line with ecological modernization precepts. As an example, GEMI's online tool devoted to climate change includes a detailed assessment of climate related business risks and opportunities, guidelines as to formulating a business strategy to reduce emissions, and extensive information regarding the different steps to implement such a strategy. The goal is to make such tools available to corporations that can then decide to use them on a voluntary basis, in the hope that they contribute to enhancing general profitability at the same time as they reduce environmental impacts.

In terms of strategic orientation, GEMI's documentation appears to implicitly favour a free-market neoliberal strategy. Its insistence on exclusively dealing with the corporate community, as well as the complete absence from its action repertoire of lobbying or networking with political elites are evidence of an exclusively business-centred strategy, at odds with the approach taken by all other CEPGs. In its discourse, the GEMI does not directly oppose governmental regulation. Instead, state regulation is framed as an external force that businesses need to take into account in their strategic decisions, and not in terms of its potential to open up new markets for less environmentally detrimental products. Although its membership and collaborations cover a broad range of positions, the GEMI also counts among its members companies and groups who have taken a strong free-market stance (and even climate change denialist positions), such as Koch Industries and the International Petroleum Industry Environmental Conservation Association (IPIECA).

World Business Council for Sustainable Development

The WBCSD was established in 1995 as a forum of CEOs of the largest corporations. Its creation was one of the outcomes of the 1992 UNCED²⁷ – the merger of two predecessor major organizations: the Business Council for Sustainable Development (BCSD) formed “to advise UNCED on business and industry issues and to stimulate involvement by business in UNCED” (Schreuder 2009:39), and the World Industry

²⁷ See Chapter 2.

Council for the Environment (WICE), created by the International Chamber of Commerce (ICC) to provide a venue for forging business consensus in preparation for that same conference (Najam 2013). As with many other CEPGs as well as for its predecessor organizations, the WBCSD's goal is to convince corporate elites of the importance of organizing to address environmental degradation concerns, to forge a consensus on the positions to adopt, and to bring these positions to bear on policy-making. It is organized at the highest level, as its invitation-only membership comprises the largest TNCs represented on the council by their CEO or chair. Its KPM work is conducted by various topic-based working groups, each co-chaired by member CEOs. Based in Geneva, the WBCSD extends its geographical reach to all regions of the globe through its network of nationally organized associate business groups, led by CEOs of smaller locally-based firms. This network serves to increase the WBCSD's political influence and that of its members companies with governments, enabling a penetration of national elites that draws them to its project. Conversely, this also allows the WBCSD to receive input from local constituencies to improve the local relevance of its publications and tools, and thus its legitimacy among national elites.

Like that of other CEPGs, the discourse of the WBCSD frames climate change mitigation, and sustainable development in general, as based on resource efficiency and the application of ecological modernization. In general, the WBCSD endorses the need for regulation and international frameworks for GHG emissions, so as to provide the conditions necessary for the development and diffusion of energy efficient technologies by private corporations, and views the failure to prepare for a forthcoming regulated environment and a high price of GHGs as a risk to firm competitiveness (Vormedal 2008). As to the agents of its ecological modernization narrative, the WBCSD's material, as that of the C2ES or the CCC, strongly features "business" as the main actor of an eventual economic and social transformation, but goes even further by singling out large companies, its core membership, to play this key role (Bakker 2013).

A certain will to address the worst contradictions of globalized capitalism appears in the WBCSD's climate change material, which talks about "meeting societal development

needs”²⁸ and includes as a priority the electrification of remote areas using renewable energy sources. The work of the Climate and Energy working group, as well as the discourse found in the WBCSD’s most recent report on the agricultural system (WBCSD 2014), reproduce with regulationist overtones the ecological modernization narrative presented by other CEPGs. This narrative encourages the application of a general, intensive ecological modernization program that would be led by the corporate sector in all its dimensions, and facilitated by governmental policies that would create the appropriate conditions and provide extra funding. The application of this program would in turn generate large scale profit opportunities and economic growth from which both corporations and governments would profit.

The neoliberal regulationist strategy features more prominently in the WBCSD’s recent exercise of long-term visioning, termed “Vision 2050”. The material produced as part of this initiative, developed by a dedicated working group in consultation with local business elites in multiple countries, delineates a vision of continued sustainable progress for the world that includes improved conditions for people, greater importance of city and regional level governance, sustainable management of ecosystems and the internalization of social and environmental externalities, all taking place under the guidance of corporations that “help society manage the world’s major challenges” (WBCSD 2010:7). Vision 2050 presents a broad view of a world in which incremental social and environmental reform would be applied to achieve a better quality of life in general. This vision concerns not only the corporate sector but humanity as a whole, and thus could be considered as part of a discursive strategy to foster broad social consensus around the WBCSD’s green capitalist project, as well as legitimacy among more socially-oriented global capitalists. Despite this initiative’s focus on mitigating the social, economic and environmental contradictions of global capitalism, the narrative it presents completely sidelines any role for governments and transnational state agencies, and instead presents corporations as the only protagonists with any substantial agency in making this “vision” happen.

²⁸ Source: www.wbcsd.org/work-program/focus-areas/energy-and-climate/climatesolutions2013/cs2013keymessa.aspx, consulted June 10, 2014.

It is interesting to note the contrast between the final Vision 2050 report and a preparatory document available on the WBCSD's website (WBCSD 2009). This document summarizes the consultations held by project co-chairs and WBCSD staff in a series of meetings around the world with national-level associations and other nationally- and regionally-based corporations and stakeholders. These consultations reveal that some participants adopt a much more strongly regulationist approach to world issues and greatly emphasize the role of governments to drive social, economic and environmental change, as well as the constraints to their regulatory powers posed by political divisions and short-term election cycles. Several comments went as far as to criticize free market principles (WBCSD 2009:7) and to propose replacing GDP by more comprehensive indicators of progress (WBCSD 2009:13, 25). Contrasting this document with the project's final report reveals some of the workings of the consensus-making process taking place within the WBCSD. Thus, after gathering a broad range of opinions from members of multiple national corporate communities and other sectors, the final report chose the elements that were coherent with the WBCSD's staunchly neoliberal orientation, leaving aside other elements, such as the critique of free-market principles. The content of the report, which represents WBCSD positions, benefits from the legitimacy provided by the broad geographical and social range of consultation participants, hence helping it gather more political traction when used as a lobbying tool (see Arnot 1989; Steffek 2009). Yet, making the consultation document publicly available provides material for debates within the WBCSD. In sum, multiple general strategic visions for societal change do exist among WBCSD constituents, coalescing around what I would characterize as a mildly regulationist approach.

United Nations Global Compact

The United Nations Global Compact was created in 2000 as a public-private partnership between the WBCSD, the ICC and the UN around issues of corporate social responsibility (Soederberg 2007). Its board brings a small contingent of TNC chairs and CEOs together with high ranking UN officials as well as labour and NGO representatives (Carroll and Sapinski 2010). The issues addressed by the Global Compact span a much broader range than other CEPGs and cover all domains of corporate social responsibility,

from human rights to labour rights, corruption, and environmental and sustainability issues. The Global Compact itself consists in ten principles covering these areas, that are said to have originated in the foundational texts of sustainable development, namely the Brundtland report, the Rio Declaration and Agenda 21. These principles together form a code of conduct that member corporations endorse and are expected to put into practice. The Global Compact principles are presented as “a practical framework for the development, implementation, and disclosure of sustainability policies and practices, offering participants a wide spectrum of workstreams, management tools and resources – all designed to help advance sustainable business models and markets”²⁹. Similarly, the Global Compact’s Caring for the Climate initiative proposes a document that corporations can endorse if they so desire.

Thus, the KPM work of the UN Global Compact revolves around voluntary adhesion to codes of conduct, which is presented not as a replacement for but as complementary to governmental regulation. To encourage adhesion, they provide corporations with information, guidelines and tools to facilitate their implementation. The stated goal is to mobilize the corporate community around these principles so that beyond implementing them internally, corporate executives also lobby governments in support of them. Importantly, the Global Compact seeks to mobilize the corporate community around a global climate agreement. Despite the insistence on the voluntary nature of corporate engagement, the discourse presented tends toward a regulationist approach similar to that of the WBCSD, with which the Global Compact collaborates closely. It strongly emphasizes the need for a regulatory framework to address GHG emissions, and promotes various private codes of conduct and green certifications beyond its own as the most appropriate means to reduce the corporate environmental footprint.

Discussion

The discourse of climate capitalism

The above account of each CEPG analyzed the work they do as hegemonic organic intellectuals, and reviewed their organizational forms, discourses, and action repertoires.

²⁹ Source: www.unglobalcompact.org/Aboutthegc, consulted June 10, 2014.

Organizationally, every CEPG is steered by a board of directors that comprises at least a few – as in the case of the C2ES –, but usually a majority or totality of corporate elite members. The rank of these individuals in their respective corporations varies according to the stature of each group. Groups of lesser importance such as e5, the GEMI or the IETA attract lower level vice-presidents or directors in charge of sustainability issues, who may not have much clout in the actual decision-making process of their firms (see Paterson 2013). On the contrary, the WBCSD, certainly the most prestigious group in the sample, requires CEO engagement both on the board and in the KPM process itself through its many working groups. Nonetheless, all groups function as forums where board members meet together and exchange information and views about what climate capitalism is and how it is to be implemented. Those exchanges create solidarity among members of the global corporate elite and their organic intellectuals through collective participation in the climate politics KPM process. In the case of many CEPGs, this strategy-planning and solidarity-making are extended to other categories of global elite members: political elites, high-ranking bureaucrats, and top academics, thus bringing elites from multiple fields together into a global “sustainability elite”.

As to the actual discourse produced in this process, we find very little variation among the narratives of change presented in CEPGs’ public material. The main narrative goes as follows: “business”, once governments provide it with the appropriate “playing field”, consisting in minimal global standardized regulations and substantial financial incentives, will use its special power of innovation to solve climate and sustainability issues by applying techno-fixes that will at the same time be a source of profit and relaunch global economic growth. In terms of the actors of this tale, as I emphasized above, business represents the main, and often only, force of change; governments at best play a minor support role to corporate action, and at worst are a hindrance; NGOs, when present, can be junior partners whose role is not specifically defined; human beings are non-existent in themselves, and appear only under the form of a population to be employed or managed; similarly, ecosystems are sources of wealth as natural capital and thus objects to be managed as well. This discourse represents a pure example of the idea of neoliberal environmentalism based on ecological modernization (see Bernstein 2002)

and rests heavily on a Promethean view of technology as all powerful (see Dryzek 2013). It also functions as a subset of the discourse on corporate social responsibility (CSR) that has developed in the last two decades or so, and that glorifies the capacity of the corporate sector to “self-regulate” by adhering to various codes of ethics (see Hillary 2013; Rowe 2005; Sklair and Miller 2010), of which the Global Compact is an example (May 2006; Whitehouse 2003). The simplicity of the climate capitalist discourse and its portrayal of “business” as a coherent and cohesive group taking charge of the fate of the world provide it with greater traction among the globalist corporate community and thus allows it to act as a mobilizing narrative, a “political myth” (see Flood 2002)³⁰, which is precisely its intended purpose. There is remarkable consistency among almost all CEPGs in the form this narrative takes. There is only one exception, as noted in the accounts above: the Club of Rome does not make use of exactly the same narrative. The mobilizing political myth it puts forth is rather based on a profound critique of both the economic system, whose tendency toward exponential growth is seen as threatening planetary stability, and the political system, described as unable to cope with currently unfolding planetary overshoot. However, the Club of Rome’s discourse still features prominently technology and improved efficiency as the way out of the environmental and climate crisis. For their part, the GCF and the GEMI do not emphasize this mobilizing account in their material either, although it still informs their work as a subtext. The two elements of discourse that are present among all CEPGs without exception are first, technological prometheanism, and second, the view of the earth as a system to be managed by an elite of corporate heads, politicians, and technocrats characteristic of the globalizing elite (Sklair 2001). In sum, the discourse of climate capitalism appears to be well structured to act as a mobilizing narrative among the global corporate community. It incorporates the perspective of neoliberal globalization, and finds its centre-of-gravity in a neoliberal structuralist strategy yet also incorporates regulationist elements. Significantly, the narrative does not seek a strong regulation of global ecosystems and stops short of a more actively interventionist neo-Keynesian perspective.

³⁰ Considered as a political myth, this discourse could be likened to what Girardet (1988) describes as a “myth of the saviour”; on political myths, see Barthes (1972), Sapinski (2003).

The climate capitalist action repertoire

Although all CEPGs function as elite forums and knowledge producers and mobilizers in one way or another, we find a greater variation in their action repertoire than in their discourse. First, they use various strategies to reach out to different constituencies. Thus, most CEPGs aim to connect corporate and political elites, and some like the C2ES, the CCC, the GCF and the Club of Rome extend this reach to include academic elites, especially economists and computer modellers, and NGO heads. For its part, the GEMI focuses only on the corporate community, to the complete exclusion of other social actors. In terms of their activities, CEPGs target different groups through different means: they hold conferences for broad networking among elites, they promote their ideas among academia by publishing reports and scholarly papers, and they reach out to the general public and the media through their website and by releasing press statements. As well, as explained above, they aim to create solidarity and consensus among the corporate community through the production of a mobilizing discourse, which they make available on their websites and through other documents as for example the CCC's manifesto and the WBCSD's Vision 2050 project report and associated material.

Second, geographically, all groups reach a global audience for the material they produce, and are at least open to memberships from any country. The BCSE and the GEMI, based in the United States, direct most of their energy nationally, targeting transnational capitalists closely linked to the US state, a major component of the transnational political system (see van Apeldoorn and de Graaff 2012; Robinson 2004). Some European-based CEPGs such as e5 and the GCF direct their action regionally, and other groups work to bridge between North America and Europe. Finally, fully transnational groups like the Climate Group, the WBCSD and the UN Global Compact are present in all regions of the world, although the bulk of their activities is still concentrated in the North Atlantic and in BRICs countries. These three transnational CEPGs, as well as the Club of Rome, are internally structured to bridge between local, national and transnational levels, by means of national-level associated organizations. This model of organization is especially relevant in terms of positioning climate capitalism as a *transnational* project, able to bridge between globalist and local interests:

a new historical bloc would need to reach constituencies that are geographically located in different national contexts and bring them together under its ideology and project of globalization, drawing them away from potentially competing nationally-centred projects hostile to neoliberal globalization.

Third, as to concrete action, we find that CEPGs do very little in respect to the actual implementation of ecological modernization. Only the Climate Group is really active on this front through actual practical projects. We could argue that the GEMI, the WBCSD and the Global Compact also participate in this implementation by working to incorporate principles of corporate social responsibility and environmental management in corporate practices, although their work still targets the normative level and not actual practices. Other CEPGs simply function as consensus-making venues and “talk shops” that build the corporate elite’s collective identity and reproduce the main narrative I identified above. This specialization of most CEPGs in the discursive/normative field is of course the essence of their KPM work. By definition, and as I will discuss in Chapter 5, they maintain an extensive network of collaborations with other organizations that help implement climate capitalism in practice.

Conclusion

In this chapter I introduced the eleven CEPGs that will form the basis of the analysis presented in the next two chapters. On the basis of the documentation these policy-planning organizations have produced up to now, I reconstructed a discourse and a set of practices that are largely shared among CEPGs, and which I take to be representative of climate capitalism as a hegemonic project. Further analysis has shown this discourse to be *profoundly anchored in neoliberal ideals of corporate self-regulation, limited state intervention, and technology fetishism*. At a broader level, it also delineated a technocratic vision of the regulation of the metabolic relationship, as the whole earth, together with its human population, are described as objects of management by a global elite. Complementing this discourse analysis, I traced a diverse array of KPM practices which allow CEPGs to foster a greater cohesiveness around the climate capitalist project, reaching out to both the elite and the general public in multiple regions.

Following this inquiry into the foundations of the climate capitalist project, the next chapters will turn to an analysis of the inter-organizational architecture of relationships on which climate capitalism is built. It will enquire whether this architecture could provide the foundation for a new historical bloc to organize around the climate capitalist project, starting with the relations between CEPGs and the corporations that participate in their governance.

Chapter 4. The global climate capitalist network

Introduction

This chapter begins to address the question whether there is such a thing as a climate capitalist coalition that is coalescing around CEPGs, and that could become powerful enough to make climate capitalism a core aspect of a historical bloc leading a transition to a new regime of capitalism. The analysis I present in this chapter attempts to shed light on this question using empirical data about the corporations represented on each CEPG's board of directors, and the individuals representing them. The first section will look at the network of corporations that interlock in this way with CEPGs and among each other. In the first section, I will describe the overall structure of the network, and its regional and economic scope. I will specifically examine the interconnections between the energy and the financial sectors, which both play a crucial role in the construction of the climate capitalist project. In the second section, I will describe another aspect of the same network, focusing on the individual capitalists and other organic intellectuals that meet on CEPG and corporate boards. I will first identify the central people involved in the network; second, I will provide greater details about their outlook regarding climate capitalism.

The corporate climate policy network

Methodology

For the analyses presented in this section, I collected data about corporate representation on each CEPG's board of directors. Data collection drew upon two different sources. First, using each group's website, all of the group's board members were listed for year end 2010, and corporate positions were recorded for each of them. Second, using the LexisNexis *Corporate Affiliations* business database, data were collected for each corporation thus linked, including all board members at year end 2010, geographic location of headquarters, and main sector of business according to the US Standard Industry Classification (SIC) codes. Finally, going one step further, the list of directors was collected for each corporation that shared a director with the first set of

corporations, thus providing a complete map of the first order neighbourhood of CEPGs³¹. For cases that were not listed in *Corporate Affiliations*, I referred to Bureau Van Dijk's *Mint Global* database; for the few cases that were not found in either database, I relied on the original corporate annual reports.

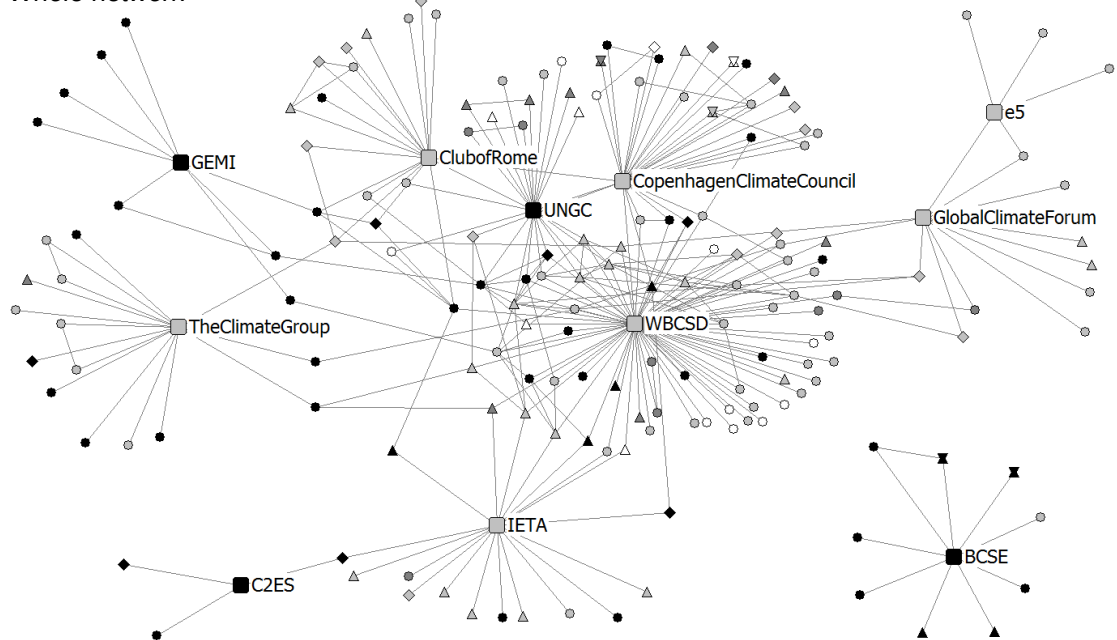
As noted in Chapter 3, a majority of CEPG directors are representatives of corporations. In the case of the most prestigious CEPGs, they are corporate directors and top executives, whereas the less prestigious CEPG boards are usually staffed by lower-level corporate managers of large TNCs or top executives of smaller firms. This means that the links between the organizations making up the network do not in all cases represent board level interlocks as such, as in most studies of power structures and corporate policy-planning groups. Hence, the main assumption underlying observed links here is that they represent channels of communication through which information can be exchanged. On the one hand, they allow communication between organizations, firms and CEPGs, who can learn about potential forthcoming regulations and profit opportunities, and exchange views about how to benefit from them, adapt to them, or strategically fight them or modify them in the case of detrimental regulations. On the other hand, the links observed make up a network of interpersonal contacts among individuals capitalists and other organic intellectuals, where novel (or conventional) ideas about climate capitalism can be shared, while also allowing a sense of community and identity to develop around the project. Thus, this structure operates as a KPM network at both organizational and interpersonal levels, and as such might constitute the foundation for a new historical bloc to build around climate capitalism. Following Scott (1985; see also Palmer 1987), I will analyze it both as an interorganizational network and a community of individuals, starting here with the intercorporate network; interindividual connections will be discussed in the following section.

³¹ Otherwise referred to as an egocentric network (Hanneman and Riddle 2011). For examples of the use of a similar methodology in the study of intercorporate networks, see Jeidels (1905), Piédalue (1976).

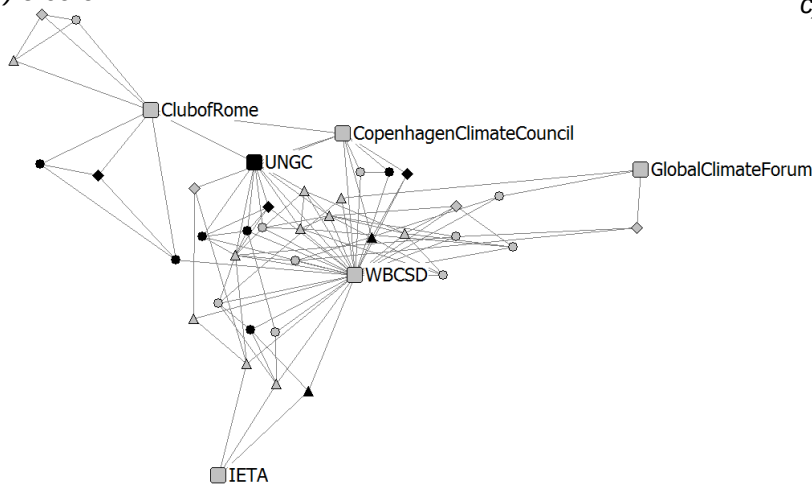
General structure of the network

Figure 1a shows a two-dimensional projection of the network of corporations the eleven CEPGs interlock with, representing their combined neighbourhoods, also referred to as their ego-network. On this figure, each shape represents an organization,

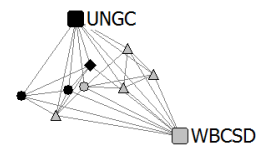
a) Whole network



b) 3-core



c) 5-core



Key: Squares: CEPGs, Triangles: energy corporation, Diamonds: financial corporations, Circles: other corporations;
Black: North America, Light grey: Western Europe, Dark grey: Core Asia, White: Periphery

Figure 1. Structure of the climate capitalist corporate network and k -core decomposition

corporation or policy group, and each line represents an interlock between two organizations. The projection uses SNA visualization software Netdraw's spring embedder algorithm (Borgatti 2002) such that spatial proximity on the figure

approximates proximity within the network (Freeman 2000)³². The k-core decomposition technique helps distinguish the general structure of the network. A k-core is a cluster of nodes within a social network in which each node links with at least k other nodes (Seidman 1983). Thus, in a 3-core, all nodes have at least three links to other nodes in the 3-core; moreover, a 3-core can contain a 4-core, which would represent a denser sub-region in which all nodes have four or more links with each other, and so on. Here, the k-core decomposition reveals a 3-core within which several CEPGs are located (Figure 1b). As shown on Figure 1c, at the centre of the network is a 5-core made up of a small number of corporations, in which the WBCSD and the UNGC participate.

On the basis of this analysis, we can distinguish between 1) CEPGs that are located closer to the dense centre of the network, within the 3-core: the CCC, the Club of Rome, the Global Climate Forum, the IETA, the Global Compact, and the WBCSD, which I will designate as the “core groups”, and 2) those occupying peripheral positions, the Climate Group, the C2ES, e5, the GEMI and the BCSE – the latter completely disconnected from the main component of the network. Three of the four green capitalist groups, those CEPGs addressing climate change as part of a broader environmental program of promoting neoliberal ways out of the environmental crisis, are part of the core. This ought to be expected due to their broad mandate and deep involvement in the field of global politics, especially in the case of the WBCSD, which draws the greatest number of CEOs of large corporations on its board. In contrast, most CEPGs that are strictly involved in climate politics occupy peripheral positions, except for the CCC, a high profile group closely linked to the WBCSD, and the IETA, arguably the most important carbon trading group.

³² The spring embedder algorithm (Eades 1984) is based on multi-dimensional scaling (MDS). MDS represents distances between the nodes of a graph in a two-dimensional space so that the physical distance between nodes represents the network distance between them. The spring embedder algorithm adds repulsion and attraction parameters to MDS to improve readability of the visual representation.

Regional scope of CEPGs

Figure 2 shows the geographical span covered by the network. Node size represents the number of firms located in each city; the labels indicate the cities where three or more



Figure 2. Geographical distribution of CEPGs and linked corporations

firms are headquartered. The map shows a high density of links in the North Atlantic region, with the firms located in other regions linking to the North Atlantic core³³. US corporations account for over a quarter of all firms, with 48 or 28.1% (Table 3), more than twice the number located in the UK, the second most represented country with 18 firms or 10.5%. Other core capitalist European countries are well represented as well,

³³ It is important to note here that although CEPGs were not selected in terms of regional representation, I consider them to be the most important global corporate organizations in the field of climate politics. Thus, the sampling strategy used for this study provides information about which corporations are involved in the governance of the most important CEPGs, including their geographical location. This does not allow to extrapolate about how corporations from the rest of the world that are not part of the CEPGs network relate to climate politics. As to this, the major East Asian economies, China, Japan, South Korea and Taiwan, are not at all represented in the sample of policy groups. This is because the groups active in these countries, such as the Business Environmental Council located in Hong Kong, the Japan Climate Leaders' Partnership, or the South Korean Climate Change Center, are either not global in scope or are affiliates of the WBCSD, in which case they were excluded from the study. The case of China is also particular. First, carbon markets have started being established there in 2011 only (Lo 2013), after data collection took place. Second, it might seem surprising that no major CEPG would be located in China. However, this appears to be coherent with similar studies of capitalist and counter-hegemonic KPM networks (Carroll and Sapinski 2010, 2013). It also might be related to the very centralized Chinese political system, which will affect the way climate politics are conducted and how carbon markets are established (see Lo and Howes 2013). The absence of CEPGs from these regions might also partly be due to language, although we would expect a group that is global in scope to have a website in English and to be listed in the *YBIO*.

with Germany at 11 (6.4%), France at 10 (5.8%) and Switzerland at 9 (5.3%). In Asia, Japan has 9 firms in the network (5.3%) and China, including Hong Kong, has 7 (4.1%). As illustrated on Figure 2, these corporations have their headquarters in a handful of “global cities”, all crucial nodes in the transnational circuits of accumulation and power (see Brenner 1998; Carroll 2007a). US firms are mostly concentrated on the American Eastern coast, especially in New York (7 corporations), one of the centres of world finance. London, another pole of global financial flows, is by far the city where the most corporations are headquartered, with 15 corporations or 8.7% of the network. It is followed by Tokyo, with 9 and Paris with 7, *ex-aequo* with New York.

Table 3. Location of headquarters of corporations directly linked to CEPGs

| Country | Whole network | | 3-core only | |
|---------------------------|---------------|---------------|-------------|---------------|
| | N | % | N | % |
| <i>Core North America</i> | | | | |
| USA | 48 | 28.1% | 11 | 31.4% |
| Canada | 3 | 1.8% | 0 | 0.0% |
| <i>Core Europe</i> | | | | |
| UK | 18 | 10.5% | 7 | 20.0% |
| Germany | 11 | 6.4% | 2 | 5.7% |
| France | 10 | 5.8% | 8 | 22.9% |
| Switzerland | 9 | 5.3% | 1 | 2.9% |
| Spain | 7 | 4.1% | 3 | 8.6% |
| Netherlands | 6 | 3.5% | 2 | 5.7% |
| Denmark | 6 | 3.5% | 0 | 0.0% |
| Norway | 4 | 2.3% | 0 | 0.0% |
| Other core Europe | 14 | 8.2% | 1 | 2.9% |
| <i>Core Asia/Oceania</i> | | | | |
| Japan | 9 | 5.3% | 0 | 0.0% |
| China | 7 | 4.1% | 0 | 0.0% |
| South Korea | 2 | 1.2% | 0 | 0.0% |
| Australia | 1 | 0.6% | 0 | 0.0% |
| <i>Non-core countries</i> | | | | |
| India | 4 | 2.3% | 0 | 0.0% |
| Brazil | 4 | 2.3% | 0 | 0.0% |
| South Africa | 2 | 1.2% | 0 | 0.0% |
| Other Latin America | 4 | 2.3% | 0 | 0.0% |
| Other Asia | 2 | 1.2% | 0 | 0.0% |
| <i>Total</i> | <i>171</i> | <i>100.0%</i> | <i>35</i> | <i>100.0%</i> |

Observation of both Figures 1 and 2, as well as Table 3, suggests that North America and Western Europe dominate the climate capitalist KPM network. Further analysis confirms this hypothesis. The k-core score represents the level of k-core at which each node is located in the network, and thus how close to the centre each node is located³⁴. Comparing the mean k-core score of organizations headquartered in the North Atlantic and that of those located elsewhere, a permutation-based two-tailed t-test returns a significant result ($p=0.0071$, 10,000 permutations). This indicates that North Atlantic nodes are generally located closer to the core of the network. Moreover, Figure 1a suggests that Western European corporations and CEPGs, coloured in light grey, appear closer to the core of the network, and those located elsewhere, including in North America, in black, generally occupy more peripheral positions. Again, the mean k-core score of European nodes is significantly higher than that of other nodes ($p=0.0342$, 10,000 permutations), thus confirming that Western European firms are more involved in the climate capitalist KPM network than those of other countries, including other core capitalist countries such as the United States, Japan and China. This is to be expected, as the climate capitalist project has been getting significantly greater traction in Europe, especially since the establishment of the EU-ETS (Levy and Spicer 2013; Paterson et al. 2014).

Looking only at the dense 3-core of the network, in the last column of Table 3, the domination of the network by North Atlantic, and especially Western European firms, is readily apparent. First, the 3-core is exclusively North Atlantic, and does not include a single firm from either core Asia and Oceania or from the semi-periphery. Second, whereas the proportion of US firms in the 3-core is only slightly higher than it is in the whole network at 31.4%, the UK and France make up respectively 20.0% and 22.9% of the 3-core, twice as high as in the whole network for the UK and almost four times higher in the case of France. In terms of absolute numbers, eight out of the ten French firms are part of the 3-core. Corporations from France, the UK and the US are thus the main participants in the core of the climate capitalist network.

³⁴ K-core functions as a measure of node centrality in the case of this network, where a single k-core exists; it would not however be a valid indicator in the case of a network with multiple k-cores.

As explained in the methodology section above, the data collection strategy returns networks of interlocks organized around a set of focal nodes, the eleven CEPGs included in the study. A network based around a single node, termed ego, is called an *ego-network*; the nodes directly linked to ego form ego's *neighbourhood*. Table 4 details the regional composition of each CEPG's ego-network, or neighbourhood³⁵. This allows us to examine the specific role of the different CEPGs in the network. *Heterogeneity* is a measure of the diversity found in an ego-network based on a single node attribute; higher scores indicate greater diversity³⁶. Heterogeneity scores presented in Table 4 show that the boards of the groups identified above as part of the network core are regionally

Table 4. *Ego-networks of CEPGs: regional heterogeneity*

| CEPGs | Heterogeneity ^a | Number of links ^b | | | | | | Total n of links |
|----------------------|----------------------------|------------------------------|----------------|-------------------|---------------|--------------------|---------------|------------------|
| | | North America | Western Europe | Core Asia/Oceania | Non-core Asia | Sub-Saharan Africa | Latin America | |
| <i>North America</i> | | | | | | | | |
| BCSE | 0.198 | 8 (89) | 1 (11) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 9 |
| C2ES | 0.000 | 3 (100) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 3 |
| GEMI | 0.000 | 8 (100) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 8 |
| UN Global Compact | 0.688 | 3 (13) | 11 (48) | 5 (22) | 1 (4) | 0 (0) | 3 (13) | 21 |
| <i>Europe</i> | | | | | | | | |
| CCC | 0.661 | 8 (28) | 14 (48) | 4 (14) | 3 (10) | 0 (0) | 0 (0) | 29 |
| Climate Group | 0.560 | 7 (47) | 7 (47) | 1 (7) | 0 (0) | 0 (0) | 0 (0) | 15 |
| Club of Rome | 0.415 | 5 (29) | 12 (71) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 17 |
| e5 | 0.000 | 0 (0) | 5 (100) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 5 |
| GCF | 0.153 | 0 (0) | 11 (92) | 1 (8) | 0 (0) | 0 (0) | 0 (0) | 12 |
| IETA | 0.609 | 6 (32) | 10 (53) | 2 (11) | 0 (0) | 1 (5) | 0 (0) | 19 |
| WBCSD | 0.641 | 16 (23) | 37 (54) | 7 (10) | 2 (3) | 2 (3) | 5 (7) | 67 |
| <i>Total</i> | - | 64 (31) | 108 (53) | 20 (10) | 6 (3) | 3 (1) | 8 (4) | 204 |

^a Higher heterogeneity scores represent a more regionally diverse board.

^b Row percentages in brackets.

³⁵ For this analysis, firms' headquarter locations were coded according to the following eight-fold categorization: 1) North America, 2) Western Europe, 3) Core Asia and Oceania, 4) Eastern Europe, 5) Middle East and North Africa, 6) Non-core Asia/Oceania, 7) Sub-Saharan Africa, and 8) Latin America and Caribbeans. These categories were first proposed by Smith (1997), and later used by Shumate and Dewitt (2008) and Carroll (2010). I adjusted them according to Kentor's more up-to-date measure of nation-state positions in the world-system (Kentor n. d.) to account for the most recent changes in the global political economy. This means in effect considering mainland China (including Hong Kong), and South Korea as core Asian countries alongside Japan.

³⁶ Heterogeneity is calculated as "1 minus the sum of the squares of the proportions of each value of the categorical variable in ego's network" (Blau 1977).

diverse, all presenting regional heterogeneity scores over 0.600, except for the Club of Rome at 0.415 and the GCF at 0.153. Among the core groups, even though it is regionally diverse, the board of the Global Compact draws the greatest part of its membership from Western Europe and core Asia/Oceania. Among the non-core groups, the Climate Group's board membership equally represents Western Europe and North America, with seven links to each region, whereas the other groups are clearly anchored within regional networks, with heterogeneity scores close or equal to zero. Such a pattern first suggests that a degree of division of labour exists among CEPGs, with some of them working on a regional level and others working globally. Second, relatedly, it also suggests that the core CEPGs envision climate capitalism as a global project and are well positioned to broker between different regional corporate interests.

Economic scope of CEPGs

All firms linked to CEPGs were classified following the economic sector representing their main source of revenue according to the US Standard Industrial Classification (SIC) codes found in either the *Corporate Affiliations* or *Mint Global* databases; these were then recoded into a smaller number of more general categories. Table 5 details the composition of the network in terms of these general categories. The energy sector, which certainly has the most important interests in climate politics (see Levy and Kolk 2002; Newell and Paterson 2010), makes up fully a quarter of the climate capitalist network, with 43 corporations. Within the energy sector we find that, perhaps counter-intuitively, companies that are mainly active in renewable energy are very thinly represented (n=5) compared to those firms whose main business is in fossil fuels, including natural gas, and nuclear energy (n=38). These latter 38 firms are large corporations with diversified investments, and most of them have a renewable energy-generation division as an extra line of business alongside their fossil fuel or nuclear operations (Derber 2010)³⁷. The energy sector is followed by “business services”, with 25 firms, a category that regroups environmental, energy and other business consultant

³⁷ However, BP, which had been very closely involved in developing the climate capitalist project since the mid-1990s (Paterson et al. 2014), recently sold off many of its renewable energy assets and announced that it would not commit to further investments in that sector (Downing 2014); Chevron also announced recently it was backtracking on its renewables investments and sold off its solar panels manufacturing subsidiary (Elgin 2014).

firms; law firms; and accountant or audit firms, all of whom are often closely involved in the climate policy scene as lobbyists, legal representatives or advisers for other corporations. Financial capital is also well represented on CEPGs' boards, with a total of 23 banks and insurance companies. Finally, manufacturing corporations from various sectors, which depend on fossil fuels as an input or as a source of energy, or whose activities entail the release of large quantities of GHGs, make up most of the remainder of the network (n=69). Looking at the network's dense 3-core, non-renewable energy firms and financial firms are present in greater proportion, with respectively 34.3% and 20.0% (Table 5); this effect is due to the fact that these are in general very large TNCs that interlock with multiple other firms. On the contrary, business service firms, in majority very small consultancy companies, are almost completely absent from the 3-core. Renewable energy firms also only tie to the network from the periphery and are absent from the denser regions.

Table 5. The climate corporate-policy network by industry sector

| Industry sector | Whole network | | 3-core | |
|---|---------------|--------------|-----------|--------------|
| | n | % | n | % |
| Energy | | | | |
| Non-renewable ^a | 38 | 22.2 | 12 | 34.3 |
| Renewable ^b | 5 | 2.9 | 0 | 0.0 |
| Business services | 25 | 14.6 | 1 | 2.9 |
| Finance | 23 | 13.5 | 7 | 20.0 |
| Other manufacturing | 21 | 12.3 | 5 | 14.3 |
| Chemicals and pharmaceuticals | 14 | 8.2 | 2 | 5.7 |
| Telecommunications/Electronics | 12 | 7.0 | 4 | 11.4 |
| Agriculture and food/Forestry and paper | 11 | 6.4 | 0 | 0.0 |
| Built infrastructure | 11 | 6.4 | 3 | 8.6 |
| Media and printing | 7 | 4.1 | 1 | 2.9 |
| Transportation | 4 | 2.3 | 0 | 0.0 |
| Total | 171 | 100.0 | 35 | 100.0 |

^a Includes fossil fuels and nuclear electricity generation (n=21), utilities depending on these forms of energy and others (n=16), and energy trading (n=1).

^b Includes wind, solar, and geothermal electricity generation.

Table 6 presents an analysis of the composition of each CEPG's ego-network according to the economic sectors it links with. As with the regional analysis,

heterogeneity scores again vary substantially. The BCSE, the Copenhagen Climate Council and the Global Climate Forum have the most diversified networks in terms of the economic sectors represented on their boards, all linking substantially to multiple sectors. On the contrary, the GEMI and e5's neighbourhoods are rather homogeneous, with GEMI linking almost exclusively to industrial capital and e5 to business consultants. In general, heterogeneity scores are higher for core groups than non-core ones. The patterns of sectoral links reveal a certain degree of specialization of the different CEPGs. On the one hand, some boards are staffed in majority by representatives of the manufacturing sector (GEMI, Climate Group), others reach out to both the manufacturing and non-renewable energy sectors (Global Compact, Global Climate Forum, WBCSD). The IETA is in majority steered by directors from the non-renewable energy sector. On the other hand, only two CEPGs, the CCC and the Club of Rome, regroup representatives from both the financial sector and the manufacturing sector on their boards. In general, the financial sector is present only in small numbers on other CEPGs' boards. Geographically, we can note that the financial sector is mostly absent on

Table 6. Ego-networks of CEPGs: heterogeneity of economic sectors

| CEPGs | Heterogeneity ^a | Number of links ^b | | | | | Total n of links ^c |
|----------------------|----------------------------|------------------------------|------------------|---------|--|-------------------|-------------------------------|
| | | Non-renewable energy | Renewable energy | Finance | Manufacturing Transportation Primary prod. | Business services | |
| <i>North America</i> | | | | | | | |
| BCSE | 0.741 | 2 (22) | 2 (22) | 0 (0) | 2 (22) | 3 (33) | 9 |
| C2ES | 0.444 | 0 (0) | 0 (0) | 2 (67) | 0 (0) | 1 (33) | 3 |
| GEMI | 0.219 | 0 (0) | 0 (0) | 0 (0) | 7 (88) | 1 (13) | 8 |
| UN Global Compact | 0.625 | 9 (45) | 0 (0) | 1 (5) | 8 (40) | 2 (12) | 20 |
| <i>Europe</i> | | | | | | | |
| CCC | 0.716 | 3 (12) | 3 (12) | 7 (27) | 11 (42) | 2 (8) | 26 |
| Climate Group | 0.578 | 1 (7) | 0 (0) | 2 (13) | 9 (60) | 3 (20) | 15 |
| Club of Rome | 0.658 | 2 (13) | 0 (0) | 6 (40) | 6 (40) | 1 (7) | 15 |
| e5 | 0.375 | 0 (0) | 0 (0) | 0 (0) | 1 (25) | 3 (75) | 4 |
| GCF | 0.727 | 3 (27) | 0 (0) | 2 (18) | 4 (36) | 2 (18) | 11 |
| IETA | 0.604 | 11 (58) | 0 (0) | 3 (16) | 2 (11) | 3 (16) | 19 |
| WBCSD | 0.562 | 18 (27) | 0 (0) | 4 (6) | 40 (60) | 5 (8) | 67 |
| <i>Total</i> | - | 49 (26) | 5 (3) | 25 (13) | 87 (45) | 26 (14) | 192 |

^a Higher heterogeneity scores represent a more sectorally diverse board.

^b Row percentages in brackets.

^c Does not include links with other CEPGs.

North American CEPGs, with only two representatives on the C2ES and one on the Global Compact. Similarly, only the BCSE and the CCC link with the renewable energy sector, which is completely absent from all other boards.

Hence, Table 6 shows that most CEPGs do link, albeit in varying proportions, to multiple economic sectors interested in climate capitalism. This draws attention to their capacity to bring together representatives of firms with different interests and to act as venues where corporate elites can work out a project that would reach across these differences. *Brokerage* is a measure of how much a node in a network mediates relations between other nodes, and thus measures an organization's capacity to play such roles. Brokerage scores calculate the number of two-step paths between all pairs of nodes that are mediated by each CEPG (Gould and Fernandez 1989). A high score means that a node brokers between a great number of other nodes that are not themselves directly linked. Brokerage can be calculated *between* groups or *within* groups, thus differentiating when a broker node links to other nodes that belong to a same group and when it links different groups together. As shown in Table 7, CEPGs present several different brokerage profiles. We find that on the one hand, three of the core groups, the CCC, the IETA, and especially the WBCSD, broker *between* multiple economic sectors, thus showing strong potential for mediating different corporate interests and building consensus around environmental and climate policy. Remarkably, the Climate Group, even though it is only peripherally positioned in the network, brings together firms from multiple sectors, hence playing a similar role. On the other hand, CEPGs also broker relations *within* each sector. Thus, the Global Compact substantially links to only two sectors (see Table 6), but plays an important role in linking the different firms within each of these sectors, especially energy firms, fostering greater cohesion among them; the Club of Rome plays a similar role within finance. Due to the breadth of its network, the WBCSD – clearly appearing as the network's central hub according to various measures – also creates links among firms within the same sectors, thus playing a dual role of brokering both between and within sectors.

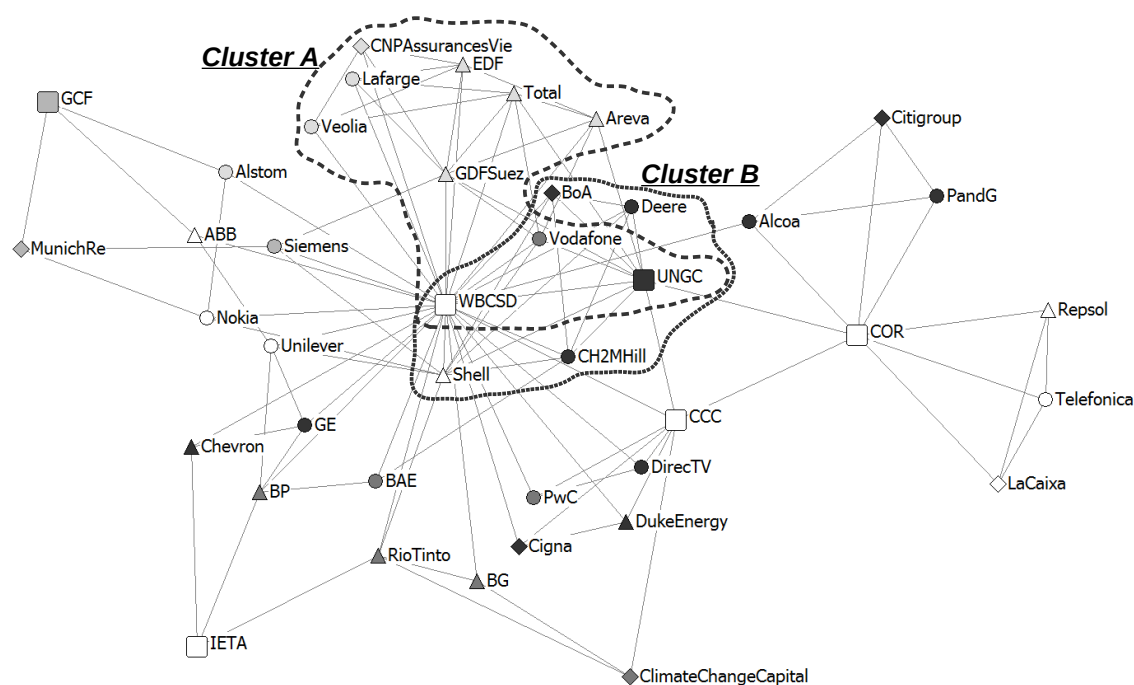
Table 7. Brokerage among economic sectors

| CEPG | Brokerage between sectors | Brokerage within sectors |
|----------------------------------|---------------------------|--------------------------|
| <i>Climate capitalist groups</i> | | |
| BCSE | 50 | 20 |
| Copenhagen Climate Council | 550 | 82 |
| The Climate Group | 182 | 24 |
| e5 | 6 | 6 |
| Global Climate Forum | 98 | 12 |
| IETA | 218 | 124 |
| C2ES | 4 | 2 |
| <i>Green capitalist groups</i> | | |
| Club of Rome | 162 | 34 |
| GEMI | 42 | 12 |
| UN Global Compact | 270 | 80 |
| WBCSD | 3712 | 622 |

Energy-finance connections at the core

Many authors have noted that the energy and finance sectors have played a crucial role in the emergence and the functioning of climate capitalism (Descheneau and Paterson 2011; Levy and Kolk 2002; Newell and Paterson 2010; Pulver 2007). More generally, these two sectors have been fundamental in the emergence and consolidation of corporate capitalism since the late 19th century (Hall and Klitgaard 2012; Mitchell 2011; van der Pijl 1984; Roy 1997; Scott 1997), and it would hence be expected that they will continue to play a crucial role in any future reorganization of the accumulation regime. Table 5 shows that both energy and financial firms make up a greater proportion of the network's tightly connected centre, defined above as its 3-core, than of the whole network, with respectively 34.3% and 20.0% of the core nodes, compared to 22.2% and 13.5% in the network as a whole. To better assess the proximity of financial and industrial capital around the climate capitalist project, I consider in this section the patterns of linkages at the network core between financial firms, energy firms and firms from other sectors. Figure 3 zooms on the nodes making up the 3-core of the network. Six CEPGs are part of this closely connected zone. Of these, the Global Compact and the WBCSD are located at the very heart of the network, being both part of the 5-core of densely interlocked nodes (see Figure 1c).

A *clique* designates a set of nodes that form a complete sub-graph, i.e. each node links to all other nodes in the set (Luce and Perry 1949; Scott 2000:114–115). The different cliques found in a network may share one or more members in common, in which case they are said to be *overlapping cliques*. Distinguishing the various cliques of a network and their overlap pattern allows us to locate regions of greater cohesiveness, as participation of a node in multiple cliques indicates it occupies a more central structural position (Degenne and Forsé 2004:94–97). There are mainly two formations of interest at the centre of the corporate climate capitalist network. First, we find a set of six cliques of size four or greater that share one or more members in common (listed in Table 8), which I will designate as “cluster A” (as indicated on Figure 3). This cluster is made up of French companies Areva, CNP Assurances, Veolia, EDF, Total and GDF Suez.



Key: Squares: CEPGs, Triangles: energy corporations, Diamonds: financial corporations, Circles: other corporations;
Black: US, Dark grey: UK, Medium grey: Germany, Light grey: France, White: Other Western European countries.

Figure 3. Corporate climate capitalist network, 3-core

France-Suez (GDF-Suez), Lafarge, Total and Veolia, as well as the British Vodafone; it also includes the Global Compact and the WBCSD. The interlocks aggregating this first cluster are supported by a handful of individuals, all closely linked to the French energy and engineering sectors. As of 2010, the following individuals carried the interlocks that comprised cluster A. Anne Lauvergeon is CEO of French government-owned nuclear

reactor manufacturer Areva³⁸. She also sits on the boards of fossil fuel firms GDF-Suez (also state-owned) and Total, in addition to being present on the Global Compact and the WBCSD. Bruno Lafond is CEO of cement producer Lafarge and a director of EDF; Edmond Alphandéry, ex-Minister of the Economy under François Mitterrand (1993-1995), is chair of state-owned life insurer CNP Assurances, and sits on the board of GDF-Suez. Henri Proglio was in 2010 simultaneously chair of Veolia Environment, a private water and energy utility company, and CEO of state-owned electricity distributor EDF, that relies on nuclear energy for 75% of its national market production³⁹; Proglio also links with CNP Assurances and with the WBCSD. In addition, secondary interlocks, i.e. interlocks created by a non-executive director of two corporations, are created within that cluster by four other high-ranking French public servants between Areva, EDF, GDF-Suez and CNP Assurances, and by two corporate directors who both link between GDF-Suez, Lafarge and Total⁴⁰ (see Table 8), thus increasing the density of this already very cohesive region of the network.

The second zone of high density in Figure 3, cluster “B”, is a smaller set of two overlapping cliques of size four or greater, that regroup American firms Bank of America, CH2MHill and Deere Co., British-Dutch oil major Shell, and British Vodafone. Here again, the cluster includes both the Global Compact and the WBCSD. These firms are linked together by only two individual elite members: Charles O. Holliday, chairman of Bank of America and chair of the WBCSD as well as director of CH2MHill, Deere & Co. and Shell; and Gerard J. Kleisterlee, CEO of Dutch electronics firm Philips and director of Shell and Vodafone.

Both clusters link with financial capital. Cluster A includes an important state-owned insurance company, CNP Assurances, and more importantly can count on the French state itself, with which the corporate sector has historically maintained very close relations (e.g. Bourdieu and de Saint Martin 1978; Dudouet et al. 2014; Dudouet and

³⁸ I use the present tense throughout, though the reader should keep in mind that the data represent a snapshot of board positions and interlocks at year end 2010. Many positions have shifted since then. For example, Anne Lauvergeon was removed from her position as CEO of Areva in 2011.

³⁹ And for 55% of its production on the international market (EDF 2010).

⁴⁰ Two important members of the global corporate elite, Thierry de Rudder, CEO of Groupe Bruxelles Lambert (GBL) and Paul Desmarais Jr., co-CEO, chair and co-owner of Power Corporation of Canada (see Carroll and Sapinski 2010; Heemskerk 2013).

Grémont 2007), as a source of capital. As to cluster B, it is brought together mainly by the chairman of Bank of America, one of the largest US banks. Several other financial firms link into the network core through single individual interlocks. Cigna, a US-based health insurance firm, links with Duke Energy through the latter's then-CEO James E. Rogers, who is also active with the CCC and the WBCSD. Munich Re, major German re-insurance company, is represented on the GCF by Gehrard Berz, head of its Geo Risks Research Department; it also interlocks with Siemens through the latter's CEO Peter Loscher and with Finnish telecom firm Nokia through a secondary interlock. Climate Change Capital, a climate finance firm, links to both British Gas (BG) and Rio Tinto through its chair Vivienne Cox; James Cameron, non-executive director of Climate Change Capital was a member of the CCC. Finally, La Caixa, a credit union based in Barcelona, links to Repsol, Telefonica and the Club of Rome through its CEO Isidro Casas, and Citigroup is linked to Alcoa, Proctor and Gamble and the the Club of Rome through secondary interlocks created by Ernesto Zedillo, ex-president of Mexico (1994-2000), and prominent member of the global corporate elite (see Carroll and Sapinski 2010).

The energy sector is also very prominent in the network core and links closely to financial interests. As explained above, cluster A is mainly composed of energy firms invested in nuclear electricity generation (Areva, EDF) and fossil fuels extraction, refining and distribution (GDF-Suez, Total). These firms and the others making up the cluster are also involved in energy intensive sectors such as cement production (Lafarge) and large scale engineering projects (Areva, GDF-Suez, Veolia). As well, cluster B includes fossil fuel company Shell, and three of the other interlocks described above involve financial firms linking with energy firms (Cigna interlocks with Duke Energy, La Caixa with Repsol, and Climate Change Capital with both BG, a gas utility, and Rio Tinto, involved extensively in coal mining).

In sum, we find multiple linkages between energy and financial firms at the centre of the climate corporate policy-planning network. However, these connections may not necessarily indicate a great degree of cohesion in support of the climate capitalist project, for two reasons. First, the denser network core actually rests on a relatively small number

Table 8. List of central cliques of size 4 or greater

| Cluster | Clique | Economic sector | | | CEPGs | Key people and main affiliation |
|---------|--------|------------------------|----------------------------------|------------------|-----------------------|---|
| | | Non-renewable energy | Other industrial sectors | Financial sector | | |
| A | 1 | Areva, GDF-Suez, Total | Vodafone | - | Global Compact, WBCSD | Anne Lauvergeon (Areva) |
| | 2 | Areva, EDF, GDF-Suez | - | - | WBCSD | Bruno Bézard, Pierre Sellal (French state) |
| | 3 | EDF, GDF-Suez | - | CNP Assurances | WBCSD | Edmond Alphandéry (CNP Assurances); Jean-Paul Bailly (La Poste); Bruno Bézard, Ramon Fernandez (French state) |
| | 4 | EDF | Veolia Environnement | CNP Assurances | WBCSD | Henri Proglio (EDF and Veolia) |
| | 5 | EDF, GDF-Suez | Lafarge | - | WBCSD | Bruno Bézard (French state), Bruno Lafont (Lafarge) |
| | 6 | GDF-Suez, Total | Lafarge | - | WBCSD | Thierry de Rudder (GBL), Paul Desmarais, Jr. (Power Corp.) |
| B | 7 | Shell | CH2MHill, Deere Co. | Bank of America | Global Compact, WBCSD | Charles O. Holliday (Bank of America) |
| A + B | 8 | Shell | Vodafone | - | Global Compact, WBCSD | Gerard J. Kleisterlee (Philips) |
| None | 9 | BP | GE, Unilever | - | WBCSD | Ann E. Fudge; Byron Grote (BP) |
| | 10 | Duke Energy | - | Cigna | CCC, WBCSD | James E. Rogers (Duke Energy) |
| | 11 | - | DirecTV, Pricewaterhouse Coopers | - | CCC, WBCSD | Samuel DiPiazza (PwC) |
| | 12 | - | Alcoa, Procter & Gamble | Citigroup | Club of Rome | Ernesto Zedillo (Center for the Study of Globalization, Yale University) |
| | 13 | Repsol | Telefonica | La Caixa | Club of Rome | Isidro Faine Casas (La Caixa) |

of individual capitalists supporting multiple interlocks between firms and who also participate in the governance of CEPGs. Thus, the bulk of the work of bridging between industry and finance falls on CEPGs. Yet, the two CEPGs that link the most to the financial sector are the CCC and the Club of Rome (see Table 6), and the former has ceased existing as a CEPG while the latter advocates a more marginal, neo-Keynesian, version of climate capitalism (see Chapter 3). Second, the most cohesive region of the network (Cluster A) regroups French firms that tightly interlock together. Carroll

(2010:96–97) has shown that the French national corporate network forms a densely interlocked community within the transnational network of interlocking directorates (see also Heemskerk and Takes 2014). Thus, the high density of the cluster observed in the data is indicative of the structure of the French network in general, as much as it is of French interest in climate capitalism. This said, French firms do still link in high proportion to CEPGs. Hence, according to our observations, some linkages do exist between energy and financial firms around climate capitalist KPM work, although these are not mediated by the main CEPGs but rather by a small number of interlockers. These linkages thus remain generally weak in 2010.

This section has focused on the structure of the climate capitalist network. It reveals a core-periphery structure whose central positions are in large part occupied by energy and financial corporations mostly based in Western Europe, and carried by a handful of big interlockers. The next section will examine where climate capitalism stands within the global network of the largest corporations.

Climate capitalism and the field of global corporate power

Analysis of both the climate politics literature and the discourse of CEPGs establishes climate capitalism as a neoliberal project seeking to address the climate crisis through market measures that turn aspects of nature into new means of accumulation while keeping direct state regulation of GHG emissions to a minimum. This section will explore where climate capitalist organizations stand within the general field of corporate power, here operationalized as the 500 largest corporations in the world and the network of interlocks that connects them together. I will look at the position CEPGs occupy among the network of G500 interlocking directorships. Whereas the analysis presented in the above section demonstrated the existence of a climate capitalist policy network, this section will assess the extent to which this climate capitalist policy network reaches into the very top layers of the corporate community. It will seek to answer the question of the amount of influence the climate capitalist project, via the corporations present on CEPG boards, has within the broader field of corporate power, and thus if its supporters can ever hope that the project becomes a central part of a new hegemonic bloc.

Methodology

The analysis in this section uses as a starting point the network of interlocks among the 500 largest TNCs in terms of revenue (subsequently designated as the G500). Contrary to the previous section, it is not an ego-network analysis but a complete network of the relationships between these 500 corporations, which the 11 CEPGs tie in. I established the list of G500 corporations for 2010 on the basis of the Fortune Global 500 list published in June of 2011 that lists the largest corporations by revenue⁴¹. From this list, I constructed a stratified sample that included the largest 400 industrial firms ranked by revenue and the largest 100 financial firms ranked by assets, so as to account for the under-representation of one or the other sector in the Fortune list. Constructing such a stratified sample is considered best practice in studies based on a list of the largest national or global corporations (e.g. Carroll 2010; Stokman et al. 1985). It originally served to account for the fact that banks and other financial corporations generally declare lower revenues despite that they control vast assets. Such a stratified sample thus avoids under-representing financial capital. In this case though, the situation was the opposite, as the G500 list of 2010 included 391 industrial firms and 109 financial firms. To ensure comparability with previous studies, I nonetheless constructed a sample of 400 industrial and 100 financial firms.

As previously, for each corporation, I then collected the list of all directors, location of headquarters, main sector of activity (SIC code), and basic financial information using the LexisNexis *Corporate Affiliations* database; Bureau van Dijk's *Mint Global* database was used to complete the information when necessary. For firms using the dual board system, both boards were merged and are considered as a single entity in the analyses, as per previous studies.

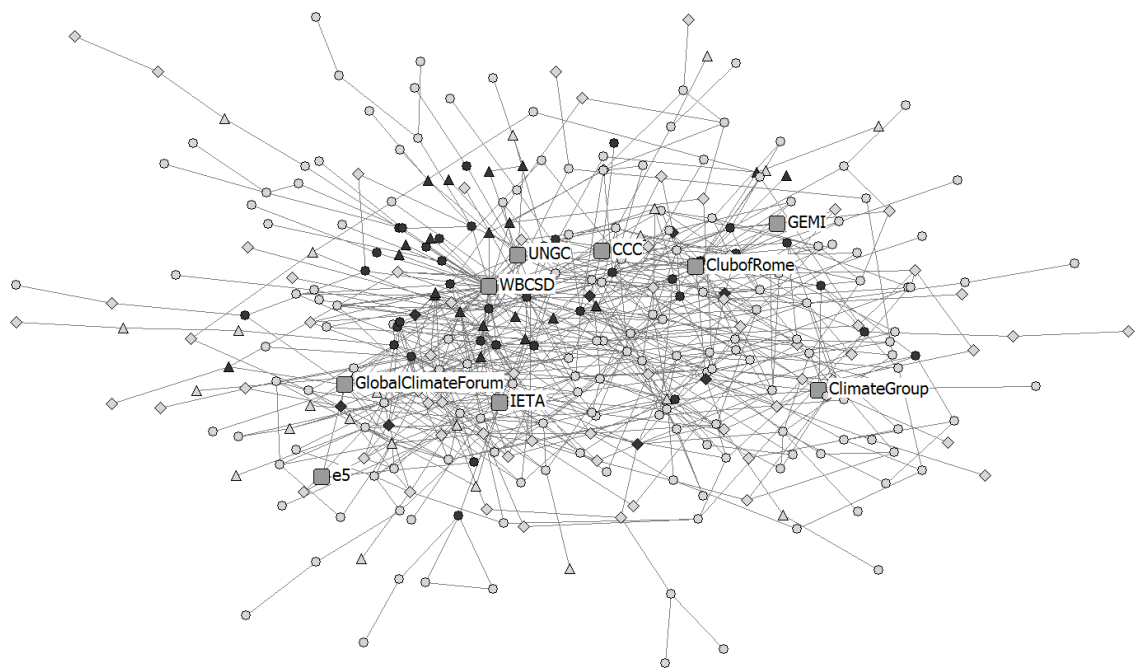
Finally, for the purpose of the following analyses, directors of subsidiary firms who also are directors of one or more CEPG have been included as if they were board members of the parent corporation. This is to account for the fact that many CEPGs' boards are often staffed with lower level managers and directors of subsidiaries of major corporations, who do not sit on the parent company's board but still represent it on CEPG

⁴¹ Available online: <http://fortune.com/global500/2011>, consulted in October and November 2011.

boards. These linkages, despite the fact that they are not board interlocks as such, are meaningful and need to be considered in this study. They represent channels of communication between firms and CEPGs, and are indicative of an interest in influencing the climate capitalism project. Thus, the network combines two types of ties: 1) traditional directorship interlocks between corporations, and between corporations and the largest CEPGs (Club of Rome, CCC, Global Compact, WBCSD); 2) lower level ties between corporations and CEPGs. These ties all represent a level of corporate involvement in the direction and internal decision-making processes of CEPGs, and are thus meaningful for this study, although results will need to be interpreted accordingly.

Climate capitalism and the interlocks network of Global 500 corporations

Figure 4 is a graphic representation of the main component of the G500 interlocks network with embedded CEPGs; it includes 325 corporations and nine out of the eleven



Key: Squares: CEPGs, Diamonds: financial corporations, Triangles: energy corporations, Circles: other corporations. Black: corporations linked to CEPGs, Light grey: other corporations.

Figure 4. CEPGs in the G500 interlocks network (main component)

original CEPGs. The corporations linking to CEPGs are indicated in black on the figure. The figure suggests that a sizeable proportion of these firms interested in climate capitalism are closely embedded within the dense core of the network. The other way

around, most CEPGs have links to multiple G500 corporations. The proportion of G500 firms on each CEPG board varies: the BCSE and the C2ES have no links at all to G500 firms (and hence do not appear on Figure 4), while the Global Climate Forum as well as all four green capitalist policy groups, the Club of Rome, the GEMI, the Global Compact and the WBCSD, have more than half their links to G500 firms. Thus, the largest corporations do play a role in the governance of most CEPGs, a crucial one in many cases.

Table 9 compares the structural position of each CEPG within the interlocks network so as to assess how closely connected they are to core G500 corporations. Centrality analysis determines which nodes are the most important in a network. It can be measured in many ways, depending on what is considered to make a node structurally important in a given network (Borgatti et al. 2013:164; Freeman 1979). Table 9 lists the 35 most central CEPGs and firms in the network according to four different measures. The first one, *degree* centrality, simply represents the number of ties connecting a node to other nodes. The second one, *closeness* centrality, is calculated as the sum, for each node, of the number of steps – i.e. the number of intermediaries – that connect it to every other node in the graph; it thus measures how easily on average one node can reach any other (Freeman 1979; Sabidussi 1966). The third measure, *betweenness* centrality, measures to what extent each node mediates relations between other nodes. It calculates, for each node, the sum of the proportion of shortest distance paths between all pairs of nodes that pass through it (Freeman 1977, 1979). The values reported in Table 9 for these three measures are normalized according to network size, and thus vary between zero and one. Finally, *beta* centrality is a more complex metric that is based on the assumption that influential nodes are those linked to other central nodes. To account for this, it adjusts the centrality of each node proportionally to the centrality of directly adjacent nodes, themselves dependent on the centrality of nodes adjacent to them, and so on, recursively (Bonacich 1987). A parameter, *beta*, is used to weight the impact nodes located farther away will have on each node's centrality score. At the lowest *beta* value possible, zero, beta centrality gives all the weight to local connections and the result is hence equivalent

to degree centrality; at its maximum value⁴², it weights a node's centrality according to the centrality of nodes located at any distance, and thus gives greater weight to the global structure of the network⁴³. For the case at hand, beta centrality appears to be a useful measure of the importance of each firm and CEPG in the network, given that I am looking at climate capitalist KPM, and that the main question of this chapter concerns the potential for the diffusion of such ideas and practices among the most important corporations of the global political-economy. I seek to identify the nodes with the greatest potential to influence the debates around whether global capitalism should reorient along the lines of climate capitalism. Those would not necessarily be the ones with only the most direct contacts (degree), nor those with the best ability to reach across the network (closeness), nor those located in brokerage positions (betweenness), although each of these measures does capture one specific aspect of network influence. What I am rather seeking is a combination of local and global network influence, which is precisely what the beta centrality measure captures (Bonacich 1987:1174). So as to strike that balance between local and global influence, and to account for the smaller influence of a node on nodes located farther away, I assigned a *beta* parameter equal to half the maximum possible value.

The WBCSD is the most central CEPG according to all metrics (Table 9). This is because of its organizational structure, as a forum of CEOs or chairs of the largest corporations. Among its 69 directors, 42 head G500 corporations, thus providing the WBCSD with a unique reach and influence at the top, reflected in its extremely high centrality scores relative to other nodes. Of the other CEPGs, the Global Compact, the IETA and the Club of Rome consistently rank among the 35 most central nodes or close. Additionally, the CCC makes it to the 20th rank in closeness, and the Global Climate Forum appears at the 30th rank for betweenness. However, the other CEPGs rank much lower in terms of the different dimensions of centrality. Thus, it appears that several CEPGs beyond the Global Compact and the WBCSD, already known to be among the

⁴² The reciprocal of the largest eigenvalue of the network's adjacency matrix represents the limit at which the equation does not converge anymore. The maximum allowable value for Beta would thus be the closest possible to this value (Borgatti et al. 2013:171), approximated in the Ucinet software package by 0.995 times the reciprocal of the largest eigenvalue (Borgatti et al. 2002).

⁴³ In which case it is equivalent to eigenvector centrality, as described by Bonacich (1972). See Bonacich (1987), Borgatti et al. (2013:171).

Table 9. Measures of centrality for G500 firms and CEPGs

| Degree ^{a, b} | | Closeness ^{a, b} | | Betweenness ^{a, b} | | Beta centrality ^{a, b, c} | |
|-------------------------|--------|---------------------------|---------|-----------------------------|--------|------------------------------------|-------|
| WBCSD | 0.0843 | WBCSD | 0.17108 | WBCSD | 0.1266 | WBCSD | 8.157 |
| <i>Shell*</i> | 0.0392 | <i>Shell*</i> | 0.16526 | Global Compact | 0.0293 | <i>Shell*</i> | 4.125 |
| <i>Total*</i> | 0.0353 | <i>GE</i> | 0.16289 | <i>Shell*</i> | 0.0291 | <i>Total*</i> | 4.008 |
| Saint-Gobain | 0.0314 | Global Compact | 0.16289 | IETA | 0.0242 | Saint-Gobain | 3.401 |
| Global Compact | 0.0314 | <i>BP</i> | 0.16278 | Club of Rome | 0.0230 | Global Compact | 3.234 |
| BNP Paribas | 0.0294 | <i>Unilever</i> | 0.16247 | <i>Alcoa</i> | 0.0200 | BNP Paribas | 3.079 |
| Deutsche Bank | 0.0294 | <i>Deere*</i> | 0.16227 | <i>BP</i> | 0.0200 | <i>GDF-Suez*</i> | 3.079 |
| IBM | 0.0294 | <i>Total*</i> | 0.16221 | <i>Alstom</i> | 0.0198 | <i>Lafarge*</i> | 3.017 |
| <i>Alcoa</i> | 0.0275 | <i>Vodafone*</i> | 0.16190 | <i>GE</i> | 0.0180 | <i>Veolia*</i> | 3.003 |
| Allianz | 0.0275 | <i>Chevron</i> | 0.16175 | Allianz | 0.0179 | <i>Siemens</i> | 2.872 |
| Astrazeneca | 0.0275 | <i>Siemens</i> | 0.16160 | <i>Total*</i> | 0.0176 | <i>Unilever</i> | 2.823 |
| <i>GE</i> | 0.0275 | <i>Alcoa</i> | 0.16155 | <i>Siemens</i> | 0.0171 | <i>GE</i> | 2.729 |
| <i>Unilever</i> | 0.0275 | <i>Veolia*</i> | 0.16144 | Astrazeneca | 0.0171 | AXA | 2.702 |
| <i>Veolia*</i> | 0.0275 | <i>ABB</i> | 0.16104 | Morgan Stanley | 0.0166 | <i>Vodafone*</i> | 2.698 |
| <i>Alstom</i> | 0.0255 | <i>Alstom</i> | 0.16063 | <i>Vodafone*</i> | 0.0160 | Deutsche Bank | 2.672 |
| AXA | 0.0255 | <i>Lafarge*</i> | 0.16063 | IBM | 0.0157 | <i>Alstom</i> | 2.649 |
| <i>BP</i> | 0.0255 | <i>GDF-Suez*</i> | 0.16038 | UPS | 0.0152 | IBM | 2.613 |
| Dell | 0.0255 | <i>Bank of America*</i> | 0.16003 | Sony | 0.0152 | EADS | 2.529 |
| EADS | 0.0255 | IETA | 0.15992 | <i>Deere*</i> | 0.0151 | <i>Alcoa</i> | 2.509 |
| <i>GDF-Suez*</i> | 0.0255 | CCC | 0.15933 | Ericsson | 0.0140 | <i>BP</i> | 2.495 |
| <i>Lafarge*</i> | 0.0255 | Novartis | 0.15933 | CCC | 0.0135 | <i>Deere*</i> | 2.425 |
| <i>Siemens</i> | 0.0255 | IBM | 0.15903 | Swiss Re | 0.0133 | Allianz | 2.389 |
| Air France-KLM | 0.0235 | <i>Rio Tinto</i> | 0.15903 | <i>Chevron</i> | 0.0130 | Dell | 2.387 |
| <i>Deere*</i> | 0.0235 | Saint-Gobain | 0.15898 | <i>Unilever</i> | 0.0129 | Astrazeneca | 2.328 |
| E.ON | 0.0235 | Dell | 0.15893 | <i>Veolia*</i> | 0.0128 | Société Générale | 2.243 |
| L'Oréal | 0.0235 | <i>Nokia</i> | 0.15848 | Renault | 0.0128 | Air France-KLM | 2.180 |
| Metro | 0.0235 | Holcim | 0.15843 | Toyota | 0.0127 | L'Oréal | 2.120 |
| Procter & Gamble | 0.0235 | Astrazeneca | 0.15839 | <i>ABB</i> | 0.0119 | <i>Chevron</i> | 2.032 |
| Renault | 0.0235 | Ericsson | 0.15834 | Pepsi Co. | 0.0119 | <i>EDF*</i> | 2.005 |
| RWE | 0.0235 | <i>Cigna</i> | 0.15824 | Global Cl. Forum | 0.0112 | Novartis | 2.003 |
| Société Générale | 0.0235 | Michelin | 0.15809 | Dell | 0.0110 | IETA | 1.966 |
| UPS | 0.0235 | Philips | 0.15804 | Pfizer | 0.0110 | Zurich Financial | 1.966 |
| <i>Vodafone*</i> | 0.0235 | BNP Paribas | 0.15775 | United Tech | 0.0108 | E.ON | 1.954 |
| Club of Rome | 0.0235 | <i>EDF*</i> | 0.15770 | Novartis | 0.0105 | Sanofi-Aventis | 1.919 |
| [8 firms] | 0.0216 | [EADS and Roche] | 0.15765 | Mitsui | 0.0102 | Club of Rome | 1.911 |
| IETA | 0.0216 | Club of Rome | 0.15712 | Climate Group | 0.0018 | CCC | 1.839 |
| CCC | 0.0196 | Global Cl. Forum | 0.15361 | GEMI | 0.0004 | Global Cl. Forum | 1.481 |
| Global Cl. Forum | 0.0196 | GEMI | 0.14693 | e5 | 0.0000 | GEMI | 0.759 |
| GEMI; Cl. Group | 0.0098 | Climate Group | 0.14638 | | | Climate Group | 0.612 |
| e5 | 0.0059 | e5 | 0.14186 | | | e5 | 0.330 |

^a CEPGs' names are in bold font; firms that are part of the 3-core of the climate capitalist network are italicized, and stars indicate those firms that are among the central clusters of that same network (see Figure 3 on page 94).

^b Normalized scores.

^c Beta=0.0517.

most influential global policy groups, occupy locations of potential influence among the G500, either in terms of the number of corporations they connect with, of their reach, of their capacity to broker between otherwise unconnected firms, or of how much they interlock with well-connected corporations. These CEPGs are well positioned to play a crucial role in drawing the largest corporations into an eventual historical bloc founded on climate capitalism.

Looking at the issue from another angle, many corporations that manifest an interest in climate capitalism through their presence on policy boards also appear among the most powerful G500 firms. In all, the 69 G500 corporations represented on CEPG boards represent 13.8% of the total. However, among the 31 most powerful G500 corporations identified in Table 9 as measured by beta centrality, 15 have a presence on at least one policy board (italicized in the table), making up 48.4% of this small group of corporations. Moreover, these 15 firms are all part of the 3-core of the climate capitalist network (see Figure 3 on page 94), which means that they are embedded in the dense centre of this latter network, often linking to multiple CEPGs. Likewise, eight of the 11 G500 firms that I identified in the previous section as being part of the central clusters of

Table 10. Difference in mean centrality for G500 firms involved in CEPG governance or not, various measures.

| Centrality measure | Mean, firms on CEPG board ^a | Mean, firms not on CEPG boards ^a | t ^b | p | Eta ² |
|-----------------------|--|---|----------------|--------|------------------|
| Beta centrality | 8.1 (7.1) | 3.9 (5.4) | 32.608 | 0.0001 | 0.061 |
| Degree | 4.9 (3.9) | 2.5 (3.1) | 32.378 | 0.0001 | 0.061 |
| Betweenness | 651.6 (925.3) | 247.0 (545.3) | 25.655 | 0.0001 | 0.049 |
| Closeness | 4711.0 (1218.4) | 5394.8 (1406.1) | 14.323 | 0.0001 | 0.028 |
| <i>N observations</i> | 69 | 431 | - | - | - |

^a Standard deviation in brackets.

^b All tests based on 10,000 permutations.

the climate capitalist network (indicated with a star in the table) appear among the 35 top G500 corporations⁴⁴. Of course, the centrality of these firms is enhanced by the fact that they link to the most central CEPGs. To assess whether CEPGs do indeed link with the most powerful G500 corporations independently of their acting as cohesive hubs, I computed centrality scores for all nodes excluding CEPGs and tested if the difference in

⁴⁴ Moreover, CNP Assurances ranks 49th in terms of beta centrality; Areva and CH2M Hill are not large enough to qualify for the G500.

means between those firms that link to CEPGs and those that do not was significant for all centrality measures. The t-tests results are reported in Table 10. These show that *the G500 firms that are represented on CEPG boards are significantly more central than those that are not*, according to all metrics considered. Thus, independently of the inclusion of CEPGs in the network, those firms that are interested in climate capitalism appear to occupy more central positions and wield above-average power within the network of interlocking directorates that ties together the select circle of G500 corporations.

The inner circle of climate capitalism

Several authors have underscored the importance of analyzing both the inter-corporate and inter-individual aspects of interlocks networks (Breiger 1974; Burris 2001; Carroll 1984; Palmer 1987; Scott 1985). This section will approach the question of the position of the climate capitalist project within global capitalism from the angle of corporate directors, considered as members of the capitalist class participating in a system of class power (see Scott 1985). I will look at the extent to which directors of policy groups

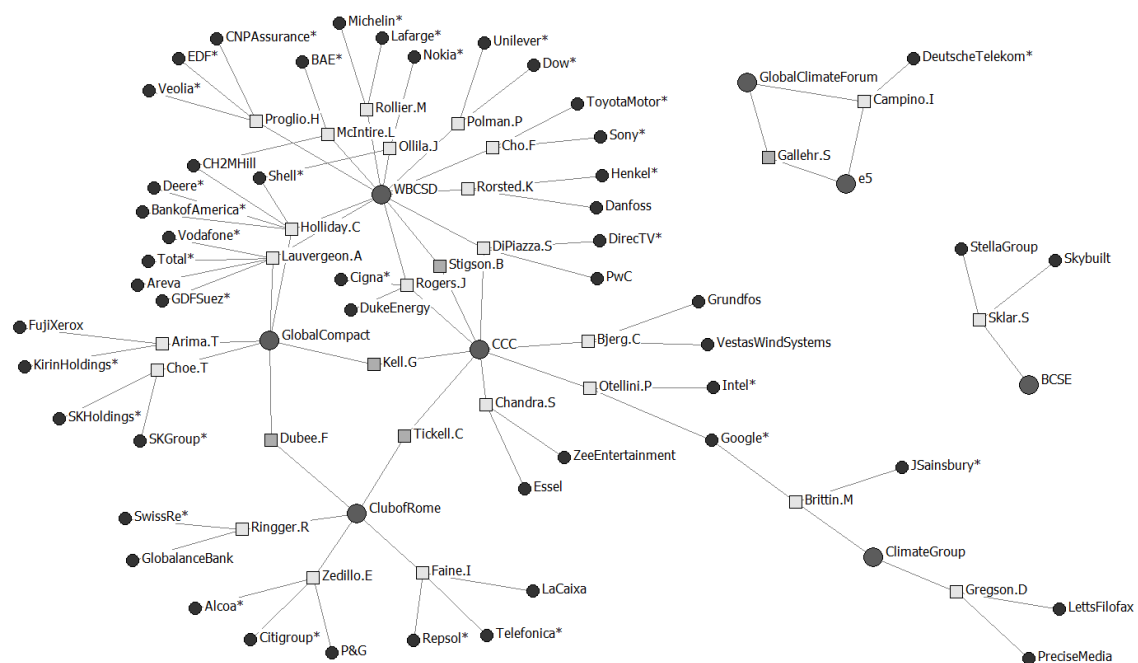
Table 11. CEPG and corporate board memberships

| N corporate directorships | N CEPG directorships | | | Total |
|------------------------------|----------------------|------------|-----------|-------------|
| | 0 | 1 | 2 | |
| 0 | - | 238 | 5 | 243 |
| 1 | 2503 | 140 | 1 | 2644 |
| 2 | 63 | 14 | 2 | 79 |
| 3 | 3 | 3 | 0 | 6 |
| 4 | 0 | 0 | 2 | 2 |
| <i>Total</i> | <i>2569</i> | <i>395</i> | <i>10</i> | <i>2974</i> |

occupy central positions within the global corporate community, understood as the ensemble of directors of G500 corporations. I first delineate a climate capitalist elite and identify an “inner circle” among that elite. Second, I look at how much this climate capitalist elite and its inner circle overlap with the most organized segment of the global corporate elite and examine its location among the global corporate community. Finally,

to complete the analysis I provide greater details about the biography and activity of some of the key individuals involved in constructing the climate capitalist project.

Following Carroll and Sapinski's (2010) study of the global corporate-policy elite, I define the climate capitalist corporate-policy elite as those corporate directors who also sit on one or more CEPG boards, i.e. the individuals who create the actual network between policy groups and corporations (illustrated by the shaded area in Table 11). Within that broad climate capitalist elite, it is possible to delineate a more restricted group constituted by the most active members of the corporate elite and associated organic intellectuals. Borrowing from Useem (1984), I will identify this group as the climate capitalist "inner circle". I include in this inner circle individuals who sit on two



Key: Large dark grey circles: CEPGs, Small black circles: corporations; Light grey squares: corporate directors, grey squares: policy group interlockers. Stars indicate G500 corporations.

Figure 5. The inner circle of climate capitalism

or more corporate boards and one or more CEPG board, thus capturing corporate interlockers who are active in the field of climate politics. To this group, I add directors of more than one CEPG who are not corporate directors. This latter category includes other important organic intellectuals who, despite their exclusion from the global corporate elite as such, nonetheless play an important role in developing its class interests

and ideas as well as in creating greater connectivity among its members. The climate capitalist inner circle thus defined includes 21 corporate-policy interlockers and 6 policy only interlockers, thus 27 individuals in total. Its members are listed in Table 12 and their interconnections are represented graphically in Figure 5.

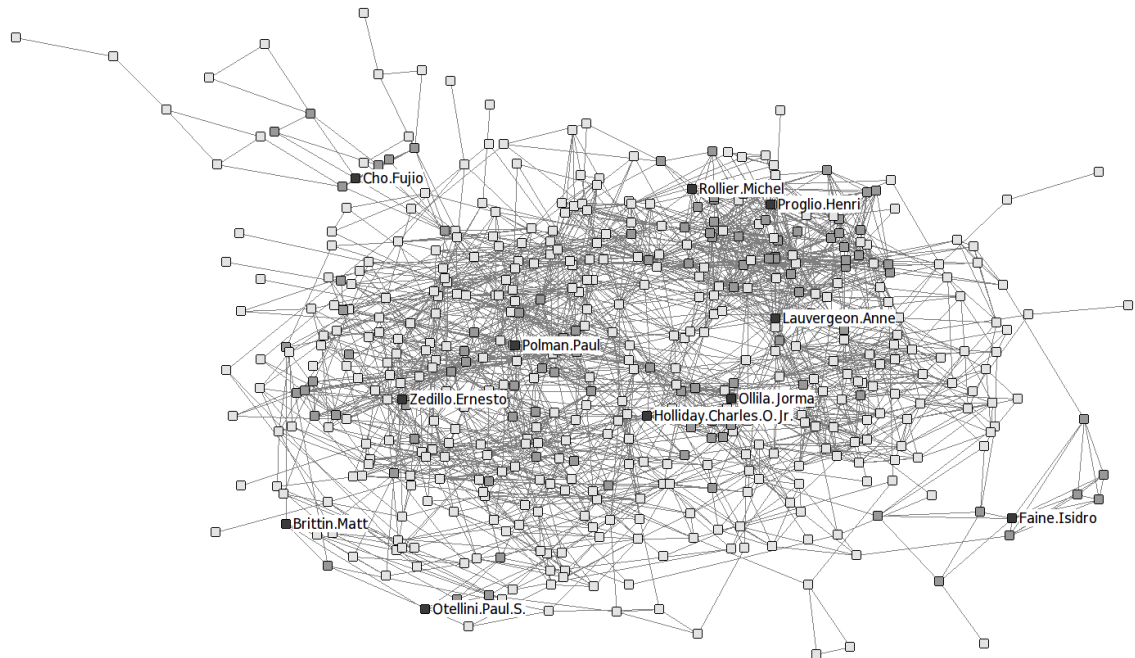
We see from Table 12 that several important corporate directors are part of the climate capitalist elite, as I already discussed above (see Table 8 on page 97), and are thus active in constructing and building support for the project. Taking a broad view of the whole climate capitalist network, we find that out of the 405 CEPG directors, 79 are also G500 directors (19.3%). Looking specifically at the climate capitalist inner circle, 19 of its 27 members (70.4%) are G500 directors; moreover, 11 of these directors carry interlocks between G500 corporations, and thus are part of the most connected segment of the global corporate elite (see Useem 1984). Thus, the climate capitalist inner circle includes several top capitalists, who may indeed be well positioned to influence the direction of global capitalism and an eventual transition to a new regime of accumulation. This said, these eleven people nevertheless represent a very small fraction of the 544 G500 interlockers (2.0%). Still, inner circle members do reach extensively beyond the climate capitalist inner circle, and the 11 G500 interlockers link directly with 244 other G500 interlockers (44.9%) with whom they share one or more board memberships, as illustrated in Figure 6. Nearly half of the most connected section of the global capitalist elite is within direct reach of climate capitalist inner circle members.

In the above analysis, social network centrality metrics allow us to identify individuals who appear to be well positioned to influence whether a greater number of corporate and policy elites will embrace climate capitalism. Yet, such a structural analysis tells only one part of the story, and it is useful to complement it with some qualitative details about these individuals who constitute the inner circle of climate capitalism. As with CEPGs, each of these individuals have their own reasons to be involved in climate politics, and their own ideas about how capitalism should be organized in face of climate change and other issues.

Table 12. *The inner circle of climate capitalism*

| Climate capitalist inner circle | CEPG boards | Corp. boards | G500 boards | CEPG boards | Corporate boards |
|-------------------------------------|-------------|--------------|-------------|---|---|
| <i>G500 interlockers</i> | | | | | |
| Anne Lauvergeon | 2 | 4 | 3 | Global Compact, WBCSD | Areva (CEO), GDF-Suez, Vodafone, Total |
| Charles O. Holliday, Jr. | 2 | 4 | 3 | Global Compact, WBCSD | Bank of America (chair), Deere & co., CH2MHill, Shell |
| Ernesto Zedillo | 1 | 3 | 3 | Club of Rome | Alcoa, Citigroup, Procter & Gamble |
| Henri Proglio | 1 | 3 | 3 | WBCSD | EDF (CEO), Véolia Envir. (chair), CNP Assurances |
| Isidro Faine Casas | 1 | 3 | 2 | Club of Rome | La Caixa (chair), Repsol, Telefónica |
| Fujio Cho | 1 | 2 | 2 | WBCSD | Totota (chair), Sony |
| Jorma Ollila | 1 | 2 | 2 | WBCSD | Nokia (chair), Shell (chair) |
| Matt Brittin | 1 | 2 | 2 | Climate Group | Google UK (managing director), J. Sainsbury |
| Michel Rollier | 1 | 2 | 2 | WBCSD | Michelin (CEO), Lafarge |
| Paul Polman | 1 | 2 | 2 | WBCSD | Unilever (CEO), Dow |
| Paul S. Otellini | 1 | 2 | 2 | CCC | Intel (CEO), Google |
| <i>Other G500 directors</i> | | | | | |
| James E. Rogers | 2 | 2 | 1 | CCC, WBCSD | Duke Energy (CEO), Cigna |
| Samuel A. DiPiazza | 2 | 2 | 1 | CCC, WBCSD | PricewaterhouseCoopers (CEO), DirecTV |
| Kasper Rorsted | 1 | 2 | 1 | WBCSD | Henkel (CEO), Danfoss |
| Lee A. McIntire | 1 | 2 | 1 | WBCSD | CH2MHill (president and CEO), BAE |
| Reto Ringger | 1 | 2 | 1 | Club of Rome | Globalance Bank (founder and CEO), SwissRe |
| Toshio Arima | 1 | 2 | 1 | Global Compact | FujiXerox (president), Kirin Holdings |
| Ingnacio Campino | 2 | 1 | 1 | e5, Global Climate Forum | Deutsche Telekom (rep. of the management board for sustainability and cl. change) |
| <i>Other corporate interlockers</i> | | | | | |
| Carsten Bjerg | 1 | 2 | 0 | CCC | Grundfos (CEO), Vestas Wind Systems |
| David Gregson | 1 | 2 | 0 | Climate Group | Lets Filofax (chair), Precise Media (chair) |
| Scott Sklar | 1 | 2 | 0 | BCSE | Stella Group (founder and CEO), SkyBuilt Power |
| Subhash Chandra | 1 | 2 | 0 | CCC | Essel (chair), Zee Entertainment |
| <i>Policy group interlockers</i> | | | | | |
| Bjorn Stigson | 2 | 0 | 0 | WBCSD (president), CCC | - |
| Crispin Tickell | 2 | 0 | 0 | CCC, Club of Rome | - |
| Frederick C. Dubee | 2 | 0 | 0 | Global Compact (senior advisor), Club of Rome | - |
| Georg Kell | 2 | 0 | 0 | Global Compact (executive director), CCC | - |
| Sebastian Gallehr | 2 | 0 | 0 | e5 (CEO), Global Climate Forum | - |

Several inner circle members have taken a public stance in favour of sustainable development and climate capitalism. Below, I provide qualitative information about inner circle members and the public statements they have made⁴⁵. Paul Polman, CEO of Unilever since 2009, director of Dow Chemicals and chair of the WBCSD since 2013, has been very critical of the corporate community for moving too slowly on climate change given the growing costs it entails, as well as for continuing investments in fossil fuels (Clark 2014). Polman argues that implementing sustainable practices is profitable



Key: Black: Climate capitalist inner circle members, dark grey: G500 interlockers directly linked to inner circle members, light grey: other G500 interlockers.

Figure 6. Climate capitalist inner circle members among G500 interlockers

for corporations in that it contributes to reducing expenses, improves productivity and attracts young talented employees, hence improving market competitiveness. Since his appointment as CEO at Unilever, he has put forth a series of internal reforms to source production inputs from sustainable sources and reduce environmental impacts. To encourage investors to develop a long-term vision, he decided shortly after his

⁴⁵ This section is based on archives from the business press and other newspapers retrieved from the World News Archive and the LexisNexis Academic databases. In both databases, I conducted searches on the name of the person and the expression “climate change”, so as to get a qualitative understanding of each individual’s views on the matter. The section also uses information from Bloomberg Businessweek’s Executive Profile & Biography section (<http://investing.businessweek.com>). Specific articles are referenced.

appointment as CEO that Unilever would stop publishing quarterly financial reports (Ming 2012). As to his broader engagement, he has also lobbied the UK Prime Minister to end the use of biofuels made from food crops (Ashton 2013). In general, Polman says he supports a sustainable and equitable model of capitalism that takes into account stakeholders' interest beyond that of shareholders, and warns that corporations that do not respond to that new consumer demand for sustainable and ethical corporate practices risk being put out of business (Confinio 2014; Ming 2012). His approach has certainly drawn attention among the corporate community. However it remains very marginal, and has been received with skepticism by some, who question Polman's ability to maintain his firm's competitiveness (The Economist 2014).

Jorma Ollila, current chair of Shell, former CEO and chair of Nokia and member of the executive committee of the WBCSD in 2012-2013, also advocates a different model of capitalism. He is a supporter of "Nordic capitalism" that for him focuses on "human values" beyond shareholder interest. He promotes social solidarity to mitigate the excesses of capitalism and talks about the need to alleviate "insecurity among the population" that leads to social unrest (Milne 2009). Ollila came out strongly in favour of carbon markets and was calling for climate action as chair of Shell during the run-up to the Copenhagen Climate Summit (Crooks 2007). Despite this, he has been criticized for Shell's decision to divest from solar and wind electricity generation in favour of biofuels, which he defended as a pragmatic "business portfolio decision" (Milne 2009).

Another defender of a "social capitalism" is Isidro Fainé, chair of Barcelona-based credit union La Caixa, who also chairs the Spanish chapter of the Club of Rome. Under his direction, La Caixa has been investing heavily into social projects, especially through its foundation, one of the largest private foundations in Europe and the world (Mallet 2011). Beyond the social values he professes, Fainé has not made public his views on the topic of climate change, and La Caixa is not involved in major business climate initiatives. However, it is important to note that La Caixa is one of the largest shareholders of oil firm Repsol, of which Fainé is a director, in a traditional type of interlock where a banker oversees his bank's investments (see Scott 1997).

In contrast to these European capitalists who believe in a model of social capitalism, Americans Charles O. Holliday, Jr. and James E. Rogers have not commented publicly on their view of how capitalism should evolve. Charles Holliday, affiliated to the Republican party, has been chair of Bank of America since 2009. He has been and continues to be involved with multiple business and environmental organizations, including: the WBCSD, which he chaired in the early 2000s and where he is honorary chair since 2011; the Global Compact where he served as a board member from 2009 to 2012; the Business Roundtable where he chairs the Environment, Technology and the Economy Task Force; and the advisory board of the Nicholas Institute for Environmental Policy Solutions at Duke University. Before going to Bank of America, he was CEO and chair of DuPont (1998-2009). Holliday co-authored a book with WBCSD's Stefan Schmidheiny in support of sustainable development (Holliday et al. 2002) and co-authored an editorial with Bill Gates supporting an ecological modernization approach based on state-led innovation in the energy sector (Gates and Holliday 2010). He has lobbied extensively in support of renewable energy, together with James E. Rogers and Bill Gates. DuPont, under Holliday's direction, was strategically at the forefront of the corporate movement in support of climate legislation and away from subsidies to oil and coal. As Friedman (2007) discusses, this lobbying was congruent with DuPont's corporate strategy. Indeed, the company was well positioned to produce ethanol, a replacement fuel, and they thought they could capitalize on the same strategy they deployed when ozone-depleting CFCs were being legislated out, that is to create a market for their product through the enactment of the new legislation⁴⁶. Thus, for Holliday, profitability and phasing out fossil fuels can go hand in hand, provided the state legislates to create the market for replacement products in the medium- to long-term. This state

⁴⁶ "We have about 100 scientists working on cellulosic ethanol [...] My guess is that we could double the number and add another 50 to start working on how to commercialize it. It would probably cost us less than \$100 million to scale up. But I am not ready to do that. I can guess what it will cost me to make it and what the price will be, but is the market going to be there? What are the regulations going to be? Is the ethanol subsidy going to be reduced? Will we put a tax on oil to keep ethanol competitive? If I know that, it gives me a price target to go after. Without that, I don't know what the market is and my shareholders don't know how to value what I am doing. [...] You need some certainty on the incentives side and on the market side, because we are talking about multiyear investments, billions of dollars, that will take a long time to take off, and we won't hit on everything" (Friedman 2007, citing Holliday).

support is crucial given the large investment required into fixed capital and the long time period necessary to recoup the costs.

James E. Rogers, current chair and former CEO of Duke Energy (2006-2013) and a registered Democrat, shares similar views and engagement in favour of ecological modernization. He has been a long time member of the WBCSD executive committee, sit with Holliday on the advisory board of the Nicholas Institute for Environmental Policy Solutions, and is involved as board member or chair of multiple US-based corporate environmentalist organizations and coalitions. He participates as well in multiple US energy lobby groups and industry associations (coal, petroleum, gas, nuclear), and is on the board of the US Chamber of Commerce, the Business Roundtable and the Brookings Institution. He also has been a director of several second-tier banks and investment companies. As CEO of Duke Energy, Rogers advocated strong GHG emissions control along the same line as Charles Holliday, that is a government-supported transition over a long time scale. The go-slow approach reflects concerns about the cost and long-term returns of new fixed capital investments (Ward 2007), but also about the threat that a fast transition would pose to overall economic growth. In general, and in line with a weak ecological modernization approach, Rogers vies to find a compromise between reducing GHG emissions on the one hand, and on the other hand maintaining economic growth and meeting industrial and individual demand for electricity (Rogers 2007). Strategically, he believes that it is better to participate in designing climate legislation than to oppose it altogether, as it makes it possible for the corporate elite to steer the process most effectively (Ward 2007). Thus, like Holliday, Rogers' engagement is also directly aligned on the interests of the industry he represents.

French energy executives Anne Lauvergeon and Henri Proglio appear to share that strategic industry-centred vision as they frame their attempts to increase production efficiency in sustainability terms. They are however much less brought to call for state investment to support ecological modernization, as they are both heading state-owned companies. This means that, unlike for their American counterparts, government finance for their sector is in large part assured. Anne Lauvergeon was chair and CEO of French nuclear reactor constructor Areva between 2001 and 2011, as well as a board member of

fossil fuel companies Total since 2000 and GDF-Suez from 2000 to 2012; she has recently been appointed director of Rio Tinto, a major British coal producer. She has been lobbying intensively to promote nuclear energy in France and abroad, which she argues should be considered as a way to reduce GHG emissions (Pagnamenta 2010). As a member of the Trilateral Commission, she authored a section of the 2007 *Energy Security and Climate Change* report in which she makes the case for nuclear power as a response to the energy and the climate crises (Lauvergeon 2007). Thus, her public activities are in general limited to lobbying on behalf of the nuclear energy sector, although she has made limited comments in an interview regarding the role of corporations that should be broader than only delivering the highest possible profits in the shortest time, and that ethics should be more emphasized in corporate culture instead of simply relying on reputation management (Sunderland 2009). Her positions on corporate social responsibility are thus close to those of her European colleagues Paul Polman and Jorma Ollila discussed above.

Henri Proglio, CEO of French utility EDF and chair of water and waste management firm Veolia Environnement, also strongly defends nuclear electricity, in which EDF is heavily involved as a distributor. Proglio is also active in the corporate community as vice-president of EURELECTRIC, governor of the World Association of Nuclear Operators, and vice-chair of *Entreprises pour l'environnement*, a French-based group of corporations supportive of sustainable development. He sits on the boards of CNP Assurances and of Natixis, subsidiary of French-based credit union BPCE and manager of EU-ETS carbon credit market through another subsidiary, Natixis E&I. He is publicly supportive of non-fossil fuel electricity generation which he believes improves competitiveness and job creation, and he also defends increasing energy efficiency in the construction and transportation sectors. He believes nuclear should be an important part of the energy mix and a substitute to fossil fuels, and strongly argues against closing down any nuclear reactor in France (Cosnard et al. 2013). He generally supports environmental protection, the costs of which he says are balanced by productivity gains and savings in public health spending (Petechuk n.d.). In sum, both Lauvergeon and Proglio defend the interests of their own firms, which they reframe as consistent with

environmental protection, understood as ecological modernization. Within the climate capitalist community, the case of France is particular. Given that both Areva and EDF are state-owned, these firms' capitalist interests directly correspond with the interest of the French state – especially given the strategic importance of the energy sector. In France, the actions of politically active capitalists hence serve to promote national interest. French national interest is best served in this case by supporting the climate capitalist project as a means to improve the international competitiveness of national firms.

Michel Rollier, CEO of French tire manufacturer Michelin up to 2012, director of Lafarge, and now president of the newly established *Plateforme de la filière automobile*⁴⁷, expresses similar views. He is actively engaged in the car industry and supports improving the environmental performance of vehicles, as according to him French manufacturers are well positioned in the sector. He does believe the transition will take place in the medium- and longer-term, but that in the short-term, “green cars” will not be a great source of profit (Bayart 2012). Rollier, like his fellow countryfolks, actively works to defend the interests of his own firm, as well as those of the industry he is attached to in general, and works to reframe them in terms of the ecological modernization paradigm, which means adopting environmental reforms that are supportive of capitalist profitability and competitiveness.

Only two members of the climate capitalist inner circle, Fujio Cho and Ernesto Zedillo, are not from the North Atlantic region. Another important figure of the car industry, Fujio Cho was president of Toyota from 1999 to 2005, then became chair of the board from 2006 to 2013, and has been honorary chair since then. He has also been active in the Japanese corporate community, chairing the Keidanren, the Japan Business Federation, in 2005 and the Japan Automobile Manufacturers Association in 2006. He is also a member of the Trilateral Commission's Asia Pacific Group. Cho became president of Toyota only two years after the company introduced the *Prius*, the first mass-marketed hybrid electric car built since the early twentieth century, and is credited with growing hybrid car sales worldwide. He says that lower-emissions cars represent a growing market for automobile manufacturers (Lewis n.d.). In terms of his social positions, contrary to the neoliberal

⁴⁷ Car Industry Platform, an industry lobby group.

tendency toward “flexibilization” of labour, he supports lifetime employment, on the grounds that it helps maintain a stable company culture (Lewis n.d.). Like other climate capitalist inner circle members, Cho thus shares the view of reducing capitalism’s environmental and social impacts because it benefits corporations to do so.

For his part, Ernesto Zedillo is credited with leading the neoliberalization of Mexico during his presidency (1994-2000). He holds a masters in economics and a PhD in law, both from Yale University, and has followed an academic career both before and after his presidency. He has been a professor at Yale since 2002 and is currently director of the Center for the Study of Globalization. In parallel to his academic activities, he serves on multiple corporate boards, including Alcoa, Citigroup and Procter & Gamble, and is a member of the Foundation Board of the World Economic Forum, the International Advisory Board of the Council on Foreign Relations, and the Club of Rome. Not being involved directly as an owner or manager of capital, he rather plays an advisory role to the capitalist class, especially on issues such as globalization and climate change. He published an edited volume on the topic with the Brookings Institution (Zedillo 2008a). Contrary to many elite climate capitalists, he does not support carbon markets but rather argues that a carbon tax would be easier to negotiate among all parties, and that the predictable level of a tax would make it easier for both corporations and governments to plan in the longer-term. Zedillo argues that climate change needs to be addressed, although not urgently, and that it would be better to adopt an incremental approach with small emission cuts in “developed” countries and investments to promote growth in “newly industrialized countries” so that they can better adapt to climate change (Zedillo 2008b). He thus appears to bring into the debate the point of view of the Global South, though he actually speaks only for the South’s globalizing elite interested in opening up markets for export and receiving investment from corporations based in the North, which are congruent with the interest of firms in core countries in globalizing production and markets.

Finally, whereas most members of the climate capitalist inner circle regularly make comments and get interviewed in the media, telecommunication and information representatives Paul S. Otellini of Intel and Matt Brittin of Google have very limited

media presence. Except for Otellini's comments on improving the energy efficiency of Intel microprocessors, neither has taken any public position on climate change and environmental issues, or is reportedly involved in corporate activism of any sort. It is hard to draw any conclusion on absences in data, but it should be noted that the telecommunications sector, despite great claims to a foundational role in the "dematerialization" of the economy so crucial to ecological modernization⁴⁸, is thus very weakly represented at the core of climate capitalism KPM.

To summarize, climate capitalist inner circle members express a common general position with regard to climate capitalism, although their opinions also diverge on several issues. They all strongly favour climate measures that at the same time improve the profitability of the firm they represent or of their sector of industry. For example, Anne Lauvergeon and Henri Proglio promote nuclear energy as a panacea for reducing GHG emissions; James Rogers of Duke Energy wants to modernize coal power plants and prepare for the deployment of carbon capture and storage technologies; Paul Polman, Michel Rollier and Fujio Cho support reducing the environmental impact of their products because they believe that markets are moving in that direction; and Jorma Ollila of Shell supported carbon trading because he thought it would help open up markets for new lines of production in solar and wind electricity where Shell could have a headstart on competitors, projects that they have since abandoned as the prospects changed. The only exception to this commitment to ecological modernization is Ernesto Zedillo who, not being a corporate executive himself, can take an apparently detached stance promoting a more general interest of the capitalist elites of the North and South.

Beyond the general agreement on ecological modernization principles, divergent positions can be found on certain points. First, as noted above, several climate capitalist inner circle members have expressed publicly to various degrees that a more regulated model of capitalism including some measure of corporate social responsibility would be desirable, although others appear to be content to work within free-market neoliberal capitalism. Unsurprisingly, this divide corresponds mostly to the continental divide

⁴⁸ A claim that is increasingly contested (e.g. Carruth 2014; Centre for Energy-Efficient Telecommunications 2013; Smil 2014; York 2006).

between Europe and the United States. Second, some inner circle members favour investment in biofuels as a substitute to fossil fuels, whereas Paul Polman has lobbied against them. Third, Ernesto Zedillo has argued against carbon markets, contradicting the opinion of other inner circle members at the time. These few examples, which represent important divisions although they certainly do not make up an exhaustive list, illustrate the fact that many debates do take place among politicized corporate elites. Nonetheless, in the case of climate and environmental politics such debates still occur within the boundaries of the general ecological modernization paradigm that informs climate capitalism, itself firmly grounded in a neoliberal project that cannot tolerate bringing into question the primacy of free markets, economic growth and corporate profitability.

Discussion and conclusion

The stated goal of the climate capitalist project is to divert financial flows from the oil and coal sectors and GHG emitting electricity production, redirecting them to support the ecological modernization of production processes. In political economic terms, this involves implementing a new regime of accumulation, based on the partial internalization of certain environmental externalities. Collective organic intellectuals such as CEPGs play a crucial role in conceptualizing the new regime, and in mobilizing large sections of the corporate elite in support of it. As I explained in Chapter 3, CEPGs represent centres of knowledge production and mobilization in support of climate capitalism: they provide space and resources for organic intellectuals to perform their work, serve as hubs to mobilize corporate support, and as such form a crucial part of the architecture on which political networks are built. The network analysis presented above shows that climate capitalist CEPGs bring together corporate elites from Western Europe and North America, and also mobilize elites within each region. They reach across multiple economic sectors and also within each sector to provide forums for corporate representatives to meet, discuss, and smooth out points of contention, and thus help to move beyond narrow economic interests to develop consensual positions on what a regime of climate capitalism should look like and how best to gather support for it. Thus, CEPGs provide a concrete organizational infrastructure to create a network of firms interested in a transition to climate capitalism.

In this regard, the analysis emphasized the crucial position occupied by particular CEPGs. The Global Compact, the WBCSD and the now defunct Copenhagen Climate Council form a triad at the core of the climate capitalist network. They regroup on their boards prestigious members of the corporate community and interlock with the largest and most influential corporations, reaching out to all regions and economic sectors. The Global Climate Forum and the IETA are also part of the dense centre of the network, and play similar though more limited roles. The Club of Rome also occupies a central position as well by virtue of its well connected members, albeit participates in slightly different networks. This is consistent with the Club's project, generally more critical of the detrimental effects of unfettered capitalist growth and leaning toward neo-Keynesianism. The BCSE, the C2ES, the Climate Group, e5 and the GEMI, despite their marginality in the network, nonetheless also play important roles in forging climate capitalist unity. Some of them bridge across regions and industry sectors, while others play more specialized regional and/or sectoral roles, but most importantly, they bring many often smaller or less connected corporations into the network and thus put them in closer contact with the climate capitalist project.

A more fine grained analysis of the specific firms participating in the denser core of the network revealed two things. First, *the non-renewable energy sector is very much involved at the core of the network*, especially through the Global Compact, the IETA and the WBCSD. The French nationalized nuclear, fossil fuels and engineering sectors maintain close connections with the most important CEPGs, the Global Compact and the WBCSD, as well as among each other. This deep involvement in the climate capitalist project could be expected, as the nuclear sector presents itself as an alternative to fossil fuels, though requires large state subsidies to support the construction of new infrastructure (Smil 2003). This sector might thus find CEPGs useful for purposes of lobbying and networking with state officials outside of France to convince them to finance new nuclear electricity projects. US and British fossil fuel corporations also make up a sizeable part of the network core, linking with the IETA and the WBCSD, even though they do not cluster together as the French firms do. These firms can benefit from being involved in and steering the climate capitalist project in two ways. First, as

noted above, fossil fuel corporations have diversified investments that include some amount of renewable energy, and thus have an interest in expanding these markets (Derber 2010). Second, as Jones and Levy (2007) note, the fossil fuel firms that are supportive of climate capitalism do not necessarily plan to move rapidly away from their core business strategy, but are rather trying to mitigate the uncertainty created by the potential regulation of GHG emissions. This is made clear by Duke Energy's James E. Rogers' statements discussed above, to the effect that he seeks to avoid a rapid transition that would destabilize both the overall economic growth pattern and his own company's business model. On the one hand, these climate capitalists seek to avoid having their fixed assets, in terms of both infrastructure and fossil fuel reserves, devalued⁴⁹. On the other hand, some of them "hedge their bets by making modest investments in low-carbon technologies and products" (Jones and Levy 2007:669) and work to open up new markets for these technologies (Derber 2010; Jones and Levy 2007; Levy and Spicer 2013). The presence of several fossil fuel firms at the heart of the climate capitalist KPM network is consistent with such a strategy on their part: that of a very long-term transition away from fossil fuels, combined with a regime that would allow them to expand their control of replacement energy sources.

In another register, the near total absence of German corporations from the core is striking, especially given their prominent position in earlier studies of the global interlocks network (Carroll et al. 2010; Windolf 2002) and of the European circuits of accumulation (Macartney 2009; van der Pijl et al. 2011), as well as the lead Germany has taken in the implementation of ecological modernization in the energy sector (see Gawel et al. 2013; Strunz 2014). Heemskerk similarly finds, speaking about 2010 data on the largest European firms, that German corporations are "[c]onspicuously absent from the list of most central firms" (Heemskerk 2013:92). He suggests that this might be due to a generational effect, with many older directors who were big interlockers retiring around the same time and the younger directors unable or unwilling to take up as many board positions because of time constraints⁵⁰. A preliminary comparison of 2006 and 2010

⁴⁹ An important task for them as, at the time of writing, the global fossil fuel divestment movement seems to be picking up speed (see Lenferna 2014; Ricketts 2013).

⁵⁰ E-mail communication, July 30, 2014.

G500 directors tends to support this hypothesis. Thus, it would appear that the German network, at the time of data collection, was undergoing a restructuration. Nonetheless, looking at the most important German firms that appear in the whole network⁵¹, we find a pattern similar to the one found for the US and UK, with two large firms with a secondary interest in renewable energy involved in the network.

Second, the empirical analysis suggests that *the potential exists for the eventual emergence of a climate capitalist coalition capable of turning tides and replacing the current carboniferous capitalist regime*, but that it is by no means assured. On the one hand, financial capital is present in the climate capitalist KPM network and linkages at the core do exist between the energy and financial sectors, both in France and in the US-UK axis. These linkages are carried by a small number of “big linkers” in the transnational corporate network. The small size of this core group of firms points to the crucial function of CEPGs in bringing together climate capitalist interests, as well as to the central role that a few individuals, who are, for the most part, closely linked to non-renewable energy interests, play in shaping climate capitalism. In this way, the climate capitalist network is similar to the global policy-planning network studied by Carroll and his colleagues (Carroll and Carson 2003; Carroll and Sapinski 2010) in that it is mainly carried by a few big interlockers.

On the other hand however, many observations point to the weakness of the structure on which the potential for climate capitalism’ hegemony rests. First, with the exception of Bank of America, Citigroup, CNP Assurances and Munich Re that rank among the 100 largest financial firms in the world, the largest commercial and investment banks, e.g. Goldman Sachs, Morgan Stanley, BNP Paribas, Deutsche Bank, HSBC, etc., do not participate directly in the governance of sample CEPGs. Besides those listed above, a handful of large banks and insurance companies are present in the network (see Table 5). However, those less central financial firms only sparsely interlock with other firms, and many of them tie in through either the Copenhagen Climate Council (which disappeared

⁵¹ Those firms are: RWE, an electric utility generating energy from coal, oil, gas and nuclear sources and with growing investments in wind energy; Siemens, an engineering conglomerate involved in turbine and trains manufacturing; Munich Re, one of the largest re-insurers; Deutsche Telekom, a telecommunications firm; and Henkel, a chemical manufacturing firm specialized in household products.

as a climate capitalist CEPG since data collection took place), or the Club of Rome, whose discourse supports a more radical, and thus marginal, version of climate capitalism⁵². Second, the small number of corporate elites supporting the core interlocks creates a structural weakness in the network, as these few individuals can resign from boards, retire or pass away, leading to the disorganization of the network (e.g. Heemskerk 2013:91). Third, though perhaps more speculatively, the strong presence of fossil fuel firms in support of climate capitalism might hurt the legitimacy of the project in its attempts to reach out to civil society organizations and to gather popular support.

Analysis of the inter-individual network identified the main agents of climate capitalism, its “inner circle”, those corporate elites who are the most involved in both the global corporate community and the field of climate politics. The structural analysis shows that these individuals form a small group that meets mainly through CEPGs boards. They also maintain connections to G500 interlockers, among whom they have an extensive reach. Thus, interpersonal relations, mediated in great part through CEPG and corporate boards, do exist on which to build a base for solidarity around the climate capitalist project. However, case studies of the most connected inner circle members delineated a diversity of outlooks and levels of engagement, as well as certain lines of division. But more than that, it revealed aspects of the dynamic interplay between the structures of capitalism and the agency of individual capitalists, apparent in the primacy of a weak ecological modernization paradigm and the dominance of firm- and sectoral-level interests.

The success of a hegemonic project depends on both the development of a coherent set of ideas and practices, and an inter-organizational and inter-individual basis that brings elites together in support of that hegemonic project. Despite the existence of a common

⁵² Of course, such observations could be due to the limitations of the empirical data. Financial capital could be involved in the climate capitalist project through different conduits such as specialized financial forums or generalist policy groups like the International Chamber of Commerce, or through its ownership of industrial capital (see Peetz et al. 2013), and more research is needed on the topic. However, policy groups like the Global Compact, the IETA and the WBCSD have established themselves since the mid- to late-1990s as the main organizations where the climate capitalist project is planned, and it is doubtful that firms with a major interest in the issue would not be represented on their boards at all. Thus, although our observations do not imply a divide between financial capital and the energy sector in terms of the climate capitalist project, the data do not unilaterally support the hypothesis of industrial and financial capital rallying together around the climate capitalist project.

paradigm organized around ecological modernization ideals, the thin architecture of the inter-corporate network in 2010 and the modest involvement of financial capital suggest that *no broad climate capitalist coalition had formed at that point in time among the global corporate elite*. To further assess the potential of climate capitalism as a hegemonic project, the next chapter looks at the network of relations that links CEPGs with NGOs, intergovernmental organizations (IGOs), and corporate-supported international organizations. This will illuminate from another angle the two main questions I am posing in this work, whether climate capitalism might become hegemonic among the corporate community and beyond in the near future, and what interests are advanced by the climate capitalist project.

Chapter 5. Climate policy-planning, global civil society, and the transnational state apparatus

Introduction

In this chapter, I will take a slightly different approach to question of climate capitalism as a hegemonic project and explore the position of CEPGs in the global political field more broadly. I will do so by looking at the network of organizations they collaborate with, including other corporate funded organizations such as industry associations, philanthropic foundations, policy-planning groups and think tanks, international governmental organizations (IGOs), and NGOs and non-profit groups.

As I explained in Chapter 4, the corporate elite is closely involved with a variety of organizations such as philanthropic foundations, universities, NGOs and other non-profits. Often, corporate elite members sit on the boards of these organizations, allowing them to directly participate in their governance and general orientations (e.g. Carroll and Beaton 2000; Domhoff 2009). These organizations link together with IGOs, including especially the UN system, into a complex network of collaborations (Beckfield 2003, 2010; see Katz 2006; Katz and Anheier 2006) which forms an architecture of global governance characterized by a mix of power exerted by hegemonic organizations at the top and struggles for influence by grassroots groups (Brem-Wilson 2012; Carroll and Sapinski 2014; Choudry and Kapoor 2010, 2013; Huxtable 2014; McKeon 2009; Tarrow 2012).

This chapter addresses the question of the place of the climate capitalist project within this global political network. For organic intellectuals and their organizations, the process of KPM considered within the field of global politics involves working with states, IGOs, foundations and NGOs for multiple purposes. These include, building influence with powerful organizations (see e.g. Parmar 2002, 2012b; Paterson et al. 2014), gathering legitimacy and support (Gramsci 1971), and developing capacity for implementing projects on the ground. Indeed, according to Gramscian theory, for a project to gather enough momentum so as to rally multiple interests, it needs to have purchase outside the corporate realm, by appealing to the interests of certain sections of the subordinate

classes. The chapter will thus explore where CEPGs stand within the field of global politics by looking at the network of collaborations between CEPGs and other organizations that are active transnationally. After briefly introducing the methodology used, I will look at the general structure of the network and its geographical scope, to assess how much reach CEPGs have within the field, that is, to what extent they are positioned to act as intermediaries between climate capitalist KPM on the one hand and global civil society and IGOs on the other hand. In the following section, I will analyze the relations between CEPGs and the hegemonic neoliberal apparatus of power, so as to evaluate how close the climate capitalist project stands relative to global decision-making centres.

Methodology

Sampling

The analysis I present in this chapter is based on the same sample of eleven climate and environmental policy-planning groups (CEPGs) described in Chapter 3. However, whereas in the previous chapter I observed the governance-level links between CEPGs and corporations carried by individual climate capitalist elites, this chapter uses data representing relations between organizations themselves and thus focuses on a truly interorganizational network. I used the *Yearbook of International Organizations* (UIA 2012) as a main source of information about CEPGs and their relations with other organizations. As I did in delineating the climate capitalist corporate network in Chapter 4, I again used a snowball sampling methodology. Starting from the eleven initial

Table 13. Sample structure

| Sample sections | N | % |
|--|-------------|--------------|
| Climate and environmental policy-planning groups (CEPGs) | 11 | 0.2 |
| First-order neighbours | 247 | 5.0 |
| Second-order neighbours | 4671 | 94.8 |
| <i>Total</i> | <i>4929</i> | <i>100.0</i> |

CEPGs, I collected information on all organizations directly linked to them, their first-order neighbours. In a second step, I collected information on organizations linked to all first-order neighbours, CEPGs' second-order neighbours, so as to capture the links

between first-order neighbours (Hanneman and Riddle 2011). Table 13 provides an overview of the extent of CEPGs' first- and second-order neighbourhood.

Data were collected using the 2012 edition of the *YBIO* between August and November of 2013. Each *YBIO* entry is updated regularly, although at times organizations do not reply to UIA requests for updates. In these cases, the latest data received from the organization is kept as current, with a note as to when the information was last updated. In the case of organizations in CEPGs' first order neighbourhood, *YBIO* data has been updated at the latest in 2005; for the majority of organizations, data has been updated in 2011 or later.

The relationships listed in the *YBIO* cover a variety of collaborations and flows between organizations. These can be of a collaborative nature, such as short-term partnerships to complete joint projects or long-term alliances; they can indicate coordination of one organization by another through board membership or by other

Table 14. Frequency distribution of link type categories

| Link type | N | % |
|-------------------------------|--------------|---------------|
| Collaboration / partnership | 7417 | 54.6% |
| Information flow | 4288 | 31.5% |
| Membership | 809 | 6.0% |
| Direction / coordination | 515 | 3.8% |
| Founder / common origin | 222 | 1.6% |
| Resource flow (non-monetary) | 132 | 1.0% |
| Funding | 115 | 0.8% |
| Symbolic support / legitimacy | 95 | 0.7% |
| <i>Total</i> | <i>13593</i> | <i>100.0%</i> |

means; they can represent resource and financial flows, when an organization receives support in money or in kind from another one; they can also indicate information flows, when organizations participate in another organization's meetings or if they are accredited as official consultants or observers by certain IGOs; finally, these links can represent all the flows implied in relationships between umbrella organizations and their members. Table 14 summarizes the types of relationships that link the 4929 organizations of CEPGs' first- and second-order neighbourhoods. For the purposes of this study, I

considered all relations indicated in the *YBIO* as indicative of a substantive relationship between organizations, and as such included them all in the analysis⁵³.

YBIO entries are based on questionnaires filled out by each organization listed. UIA staff verifies this information with other sources as much as possible, but the editors recognize that it may nevertheless be incomplete and inconsistent at times. This depends in great part on the resources each organization decides to devote to the task of filling out these questionnaires (UIA 2012: Appendix 5). Despite this minor shortcoming, the *YBIO* has been widely used for similar research (e.g. Beckfield 2003, 2008, 2010; Boli and Thomas 1997; Carroll and Sapinski 2013, 2014; Katz 2006; Katz and Anheier 2006; Meyer et al. 1997; True and Mintrom 2001) and no systematic bias has been reported. Because of the data collection method it uses, some links might be underreported when not declared by organizations, leading to lower estimates of the level of connectivity of the network.

Node attributes

I collected node attribute data about three key variables for the eleven CEPGs and the 247 organizations making up their immediate neighbourhood, using the *YBIO* as a primary source, and resorting to websites for those with no *YBIO* entry or whose entry provided insufficient information. First, I noted the city where each organization is headquartered. Second, organizations were coded according to a detailed typology to capture their organizational form or type, such as business association, IGO, lobby group, foundation, and so on. Third, I coded the main substantive issue or topic addressed by each organization, its field of activity. Below, these variables will be used each in turn to characterize CEPGs' organizational neighbourhood in terms of its geographical scope, the types of organizations involved with CEPGs, and how much CEPGs reach out to fields of interest beyond climate change and environmental issues.

Climate capitalism and the field of global politics

In this section I explore the extent to which CEPGs are positioned to act as intermediaries between climate capitalist KPM on the one hand, and the organizations

⁵³ See Katz (2006) and Carroll and Sapinski (2013, 2014) for examples of a similar use of *YBIO* data.

involved in the governance of the world-system, IGOs, business associations and forums, and international NGOs (INGOs) on the other hand. This analysis provides insight into whether the climate capitalist project does draw support from outside of the corporate community and to what extent, and sheds light on the role CEPGs may play in the hegemonic KPM process. I will first describe the structure and organizational make up of CEPGs' network of collaborations. Second, I will compare each CEPG's position within that network. Third, I will discuss the regional scope of their collaborations.

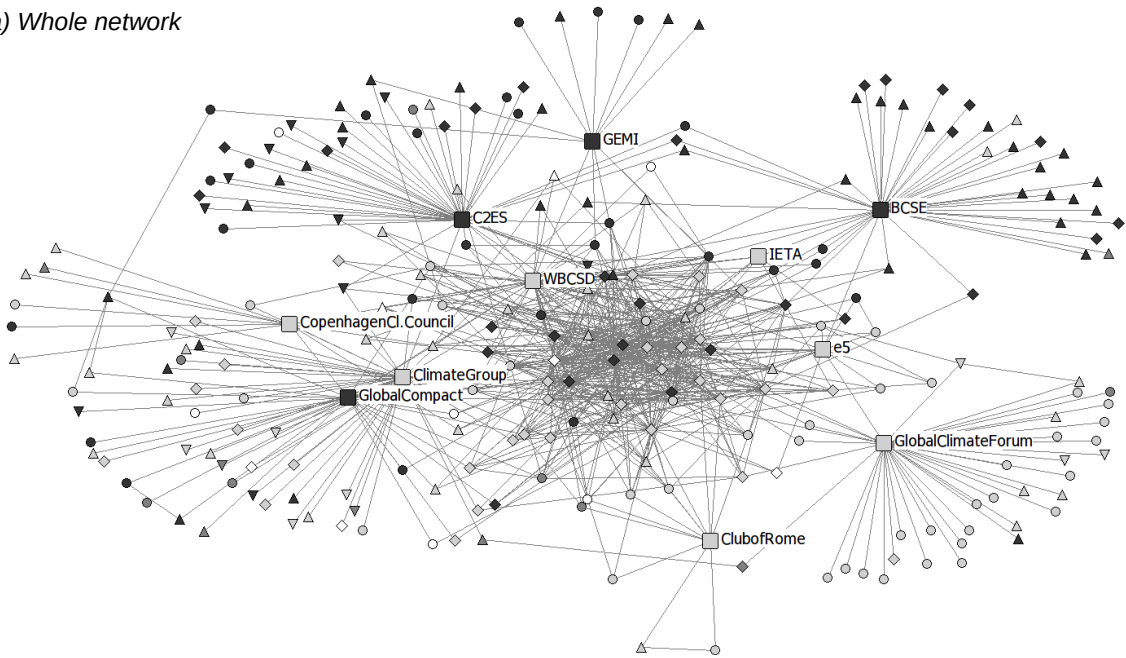
General structure of the KPM network

The sociogram shown in Figure 7 is a two-dimensional representation of the organizational neighbourhood of CEPGs; it uses a spring embedder algorithm to show the relative positions of nodes in the network (see page 83). The figure shows a densely connected core, to which other nodes connect that are successively less and less connected both to the core and among each other. Identifying the k-cores present in the network reveals a heavily nested structure. As explained in Chapter 4 (page 84), a k-core is a cluster of nodes in which each node links with at least k other nodes (Seidman 1983). In the case of the collaboration network of CEPGs, it is possible to distinguish 12 increasingly denser nested layers. Figures 7b and 7c show the 4-core and 10-core of the network, respectively.

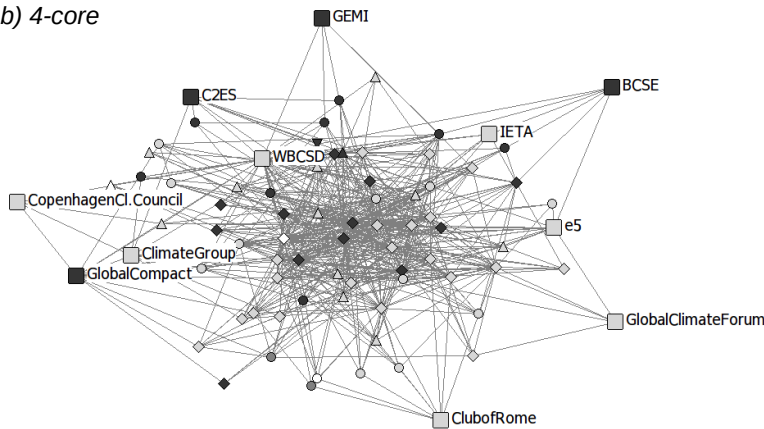
Analyzing the nested structure of the network helps us understand the position of CEPGs within it. K-core decomposition consists in iteratively removing nodes starting from $k=1$ to illustrate the core collapse sequence, as described by Seidman (1983; see also Scott 2000:111–112). Table 15 shows the collapse sequence of the graph and lists which layer each CEPG is located in. The smooth collapse sequence indicates that nodes spread out evenly from the network's core outward and that no zone of higher density exists between core and periphery (Scott 2000:111). The majority of CEPGs appear in an intermediate position, between the densely connected core and the far periphery: all are located between the 9-core and the 4-core, with the exception of the WBCSD which is part of the 12-core at the very centre of the graph (see Table 16). Thus, CEPGs on the one hand maintain close contacts with hegemonic organizations located in the 10-core

(discussed in more detail below) even though they are not part of this dense zone of the network as such. On the other hand they bring into the network and mediate between

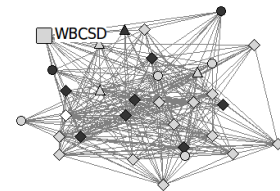
a) Whole network



b) 4-core



c) 10-core



Key: Squares: CEPGs, Diamonds: IGOs, Upward triangles: business organizations, Downward triangles: foundations, Circles: NGOs;
Black: North America, Light grey: core Europe, Dark grey: core Asia/Oceania, White: periphery.

Figure 7. Structure of the climate capitalist network and k -core decomposition

organizations that do not link to the 10-core, which would not have access to organizations of the 10-core otherwise. CEPGs hence occupy key positions, as I will further explain below⁵⁴. On the one hand, their proximity to hegemonic organizations

⁵⁴ Given the snowball sampling methodology used, it is not possible to describe CEPGs' position in the network in terms of centrality or of core and periphery. The network is constituted by the intersection

gives them a certain degree of influence at the highest levels of governance, especially in the case of the WBCSD. On the other hand, they have established their own networks of collaborators beyond the core of global politics, working with organizations that are rooted nationally and locally.

Table 15. CEPGs' collaborations network core collapse sequence

| k | N | % | CEPGs |
|----------|----------|----------|----------------------------|
| 1 | 259 | 100.0% | |
| 2 | 128 | 49.4% | |
| 3 | 97 | 37.5% | |
| 4 | 80 | 30.9% | Copenhagen Climate Council |
| 5 | 71 | 27.4% | GEMI, Global Climate Forum |
| 6 | 64 | 24.7% | BCSE, Club of Rome |
| 7 | 53 | 20.5% | C2ES, Climate Group, IETA |
| 8 | 45 | 17.4% | Global Compact |
| 9 | 40 | 15.4% | e5 |
| 10 | 32 | 12.4% | |
| 11 | 27 | 10.4% | |
| 12 | 23 | 9.0% | WBCSD |

Table 16 lists the organizations that are part of the network's 10-core, those which occupy the most central positions. Table 16 shows that the core of network is massively occupied by IGOs, especially UN agencies. Such a configuration is not surprising, given the composition of the network. IGOs are large and complex organizations that maintain an extensive variety of collaborations, including with many other IGOs as well as a large number of business organizations, NGOs and other globally active organizations. They are also one of the main targets of global lobbying and social change efforts (see Brem-Wilson 2012; McKeon 2009) and they would be expected to appear at the centre of a network of global organizations such as this one. Five corporate sector organizations are also part of the 10-core, including the WBCSD. Large NGOs make up a portion of the core as well, and interestingly, five out of the six core NGOs focus on environmental issues, indicating that first, large environmental NGOs are very well connected with both

of the eleven CEPGs' neighbourhoods, of which CEPGs constitute the centre by definition. In such a network, all centrality measures, as well as core-periphery descriptions, will be biased toward the initial nodes, here the CEPGs.

IGOs and business groups, and second, that environmental degradation is an issue that gets a large degree of attention from these latter organizations. Eight core IGOs and one

Table 16. Organizations at the core of the CEPGs network

| Name | k-coreness | Headquarters | Field of activity |
|---|------------|--------------------|------------------------|
| <i>Business groups</i> | | | |
| International Chamber of Commerce (ICC) | 12 | Paris | Business issues |
| International Organisation of Employers (IOE) | 12 | Paris | Business issues |
| World Business Council for Sust. Development (WBCSD) | 12 | Geneva | Green capitalism |
| World Energy Council (WEC) | 12 | London | Non-renewable energy |
| Greenhouse Gas Protocol Initiative (GHGPI) | 10 | Washington, DC | Global warming |
| <i>NGOs</i> | | | |
| International Union for Conservation of Nature (IUCN) | 12 | Gland, Switzerland | Envir. sustainability |
| World Resources Institute (WRI) | 11 | Washington, DC | Envir. sustainability |
| World Wide Fund for Nature (WWF) | 11 | Gland, Switzerland | Envir. sustainability |
| International Inst. for Environment and Development (IIED) | 10 | London | Envir. sustainability |
| International Institute for Sustainable Development (IISD) | 10 | Winnipeg, Canada | Envir. sustainability |
| Transparency International (TI) | 10 | Berlin | Corporate governance |
| <i>IGOs</i> | | | |
| Eur. Bank for Reconstruction and Development (EBRD) | 12 | | Growth/competitiveness |
| European Commission (EC) | 12 | Brussels | N/A |
| Inter-American Development Bank (IDB) | 12 | Washington, DC | Growth/competitiveness |
| International Fund for Agricultural Development (IFAD) | 12 | Rome | Agriculture |
| International Institute for Applied Systems Analysis (IIASA) | 12 | Laxenburg, Austria | Renewable energy |
| International Labour Organization (ILO) | 12 | Geneva | Labour rights |
| Intl. Bank for Reconstruction and Development (IBRD) ^a | 12 | Washington, DC | Growth/competitiveness |
| OECD | 12 | Paris | Growth/competitiveness |
| UN Conference on Trade and Development (UNCTAD) | 12 | Geneva | Business issues |
| UN Framework Convention on Climate Change (UNFCCC) | 12 | Bonn | Global warming |
| UN Industrial Development Organization (UNIDO) | 12 | Vienna | Growth/competitiveness |
| UN International Trade Centre (ITC) | 12 | Geneva | Business issues |
| UNESCO | 12 | Paris | Education |
| United Nations (UN) | 12 | New York | N/A |
| United Nations Development Programme (UNDP) | 12 | New York | Intl. development |
| United Nations Economic and Social Council (ECOSOC) | 12 | New York | Growth/competitiveness |
| United Nations Environment Programme (UNEP) | 12 | Nairobi | Envir. sustainability |
| World Trade Organization (WTO) | 12 | Geneva | Growth/competitiveness |
| Round Table on Sustainable Development at the OECD | 11 | Paris | Green capitalism |
| UN Water | 11 | New York | Envir. sustainability |
| International Finance Corporation (IFC) ^a | 10 | Washington, DC | Growth/Competitiveness |

^a One of the five components of the World Bank Group.

business organization are dedicated to environmental issues as well. However, thirteen core IGOs are primarily dedicated to issues related to economic growth, which added to

the five business organizations gives a large weight to the corporate community at the heart of global climate politics. Briefly thus, among organizations with which CEPGs collaborate, those interested in environmental issues meet at the network core with those dedicated to supporting capitalist economic growth. The next section looks at each CEPG's neighbourhood, the set of organizations with which each directly links.

Neighbourhood structure and composition

As explained in Chapter 4, the nodes directly linked to a central node "ego" constitute that node's ego-network, its neighbourhood. As I will now explain, CEPGs' neighbourhoods can be described according to many parameters, including their size, the density of connections between nodes, and the quantity of relations mediated by each CEPG, as shown in Table 17. First, in terms of *neighbourhood size*, i.e. the number of nodes which link directly to ego, CEPGs either exhibit relatively large ego-networks, or relatively small ones. On the one hand, the BCSE, C2ES, Global Climate Forum, Climate Group and WBCSD each link with around 40 or more other organizations. On the other hand, the IETA, CCC, Club of Rome and GEMI each link with less than 15 other organizations. Only e5 and the Global Compact are relatively close to the average neighbourhood size, linking respectively with 18 and 30 organizations. The *density* of a neighbourhood is a measure of how much organizations linking to the central node link with each other, excluding the central node. It is calculated as the proportion of existing links relative to potential links (in Table 17, the number of ties divided by the number of pairs). In an ego-network analysis, it is a indicator of the importance of each CEPG as a unique broker of relations between organizations not connected otherwise, or in other words each CEPG's contribution to the overall cohesion of the ego-network. Lower densities mean CEPGs play a greater brokerage role among the nodes that form their neighbourhood. Here again, CEPGs appear divided between those embedded in high density neighbourhoods and those with low density ones. Thus, the IETA, e5, the Club of Rome and the WBCSD all exhibit high neighbourhood density, above 14.0%, with 31.9% of organizations directly linking together in the case of the IETA. These CEPGs are embedded in dense networks of relations, close to the network core, though they conversely occupy less important positions as brokers between otherwise unconnected

nodes. On the contrary, the BCSE, the GCF, the C2ES, the Climate Group, and the GEMI all have neighbourhood densities below 3.0%. These groups show the opposite pattern: they are located further away from the dense 10-core and are positioned at the centre of star-like networks within which they can broker relations and perhaps control – to some extent – communications between organizations (see Burt 1976; Freeman 1977).

Table 17. Comparison of CEPGs' neighbourhoods

| CEPG | Size of neighbourhood | N ties ^a | N pairs | Density ^b | Betweenness | Betweenness (normalized) ^b |
|-------------------|-----------------------|---------------------|--------------|----------------------|----------------|---------------------------------------|
| BCSE | 41 | 1 | 1640 | 0.06 | 913.000 | 55.67 |
| e5 | 18 | 56 | 306 | 18.30 | 162.100 | 52.97 |
| C2ES | 43 | 19 | 1806 | 1.05 | 1262.167 | 69.89 |
| IETA | 9 | 23 | 72 | 31.94 | 30.833 | 42.82 |
| Global Cl. Forum | 39 | 8 | 1482 | 0.54 | 527.000 | 35.56 |
| Climate Group | 46 | 37 | 2070 | 1.79 | 1741.300 | 84.12 |
| CCC | 11 | 7 | 110 | 6.36 | 81.000 | 73.64 |
| Club of Rome | 12 | 21 | 132 | 15.91 | 88.000 | 66.67 |
| GEMI | 13 | 4 | 156 | 2.56 | 139.000 | 89.10 |
| WBCSD | 47 | 306 | 2162 | 14.15 | 1249.722 | 57.80 |
| UN Global Compact | 30 | 48 | 870 | 5.52 | 610.683 | 70.19 |
| <i>Mean</i> | <i>28.1</i> | <i>48.2</i> | <i>982.4</i> | <i>8.93</i> | <i>618.619</i> | <i>63.49</i> |
| <i>Std. dev.</i> | <i>15.6</i> | <i>87.4</i> | <i>860.3</i> | <i>10.07</i> | <i>593.507</i> | <i>16.41</i> |
| <i>Median</i> | <i>30.0</i> | <i>21</i> | <i>870</i> | <i>5.52</i> | <i>527.000</i> | <i>66.67</i> |

^a Excluding ties with ego.

^b Density and normalized betweenness are expressed as percentages.

Whereas density is a relative measure, *betweenness centrality* provides information about the total volume of relations brokered in the network as a whole. As explained in Chapter 4, this index calculates, for each node, the sum of the proportion of shortest distance paths between all pairs of nodes that pass through it (Freeman 1977, 1979). It hence gives more specific information about relations brokered beyond each CEPG's neighbourhood. The groups brokering the largest volume of relations are the Climate Group, the C2ES and the WBCSD, with betweenness scores of 1741.300, 1262.167 and 1249.722, respectively. Hence, in the absolute, these groups broker a very large number of relations. Oppositely, the IETA, the CCC and the Club of Rome have very low betweenness centrality, of respectively 30.833, 81.000 and 88.000. The number of relations brokered correlates strongly with the size of each CEPG's network but also

partly depends on the density of their neighbourhoods, with low density neighbourhood allowing for greater brokerage and *vice versa*. Dividing the raw score by the number of pairs in each ego-network provides a *normalized betweenness* score that is independent of neighbourhood size. The GEMI and the Climate Group turn out to mediate a greater proportion of relations in their neighbourhoods than other CEPGs, with normalized betweenness of 89.10 and 84.12, respectively. On the lower end of the spectrum, the Global Climate Forum and the IETA mediate relatively few relations in their neighbourhoods, with normalized betweenness of respectively 35.56 and 42.82. Thus, those CEPGs mediating large volumes of relations are generally not the same as those that mediate a high proportion of relations within the network. The Climate Group stands out in this regard, as it mediates the largest number of relations (betweenness=1741.300) and a very high proportion of pairs in its neighbourhood (84.121%), indicating it bridges between a large number of otherwise unconnected nodes.

To summarize, some groups broker between multiple organizations that only sparsely interlink among each other, as for example the BCSE, the Global Climate Forum, the Climate Group and the C2ES, whereas others such as the IETA, e5 and the Club of Rome are embedded within dense neighbourhoods and uniquely mediate a lower number of relations. The WBCSD, the Climate Group, the C2ES, the BCSE and the Global Climate Forum are located at the core of very large networks and thus mediate large volumes of relations. However, they do not necessarily mediate a large proportion of relations within their respective networks. Thus, each CEPG is at the heart of a complex network of collaborations and brokers a certain amount of relationships within that network, which is evidence of their extensive reach among the broader network of IGOs, business organizations and other international NGOs. For one, CEPGs collaborate with these more broadly mandated organizations in the process of hegemonic knowledge production about climate politics; the other way around, they rely on this network to mobilize knowledge and extend its reach into the sphere of global politics as a whole.

Regional scope

Figure 8 shows the geographical extent of CEPGs' collaboration network. As is apparent on the figure, the organizations located in the neighbourhood of CEPGs are

highly concentrated in the North Atlantic region, with very few of them headquartered in other regions. Table 18 presents the frequency distribution of organizations' geographical locations. The United States are by far the most represented country, with 103 organizations making up 41.7% of the network, mostly concentrated in Washington, DC, New York, and to a lesser extent Boston. Many core European countries enjoy a large representation as well, with 29 organizations headquartered in the UK, 17 in Germany, 13 in France, 11 in the Netherlands and 10 in Belgium. In Europe as well, organizations' headquarters are located in a small number of global cities: London, Paris, Geneva, Brussels, and Hamburg. The total representation of core Europe is slightly higher than that of North America, with 113 organizations, for 47.7% of the network. China is the only country outside of North America and Europe that has any substantial representation, with eight organizations located on its territory, or 3.2% of the total; of these, seven are located in Beijing. This over-representation of Europe and North America is similar to that found in the intercorporate network described in Chapter 4, which again suggests that climate capitalism is strongly linked to the North Atlantic core. Yet, the presence of organizations from the United States nearly equalling that of European ones indicates that, contrary to the inter-corporate network, CEPGs' network of collaboration is equally well developed in both regions. The geographical distribution of links differs in each case: North American organizations are in great majority located in only three cities of the American East Coast, whereas in Europe, organizations are spread out among multiple countries and cities. As in the case of the intercorporate network, links with China are less developed than might be expected given the major role China plays in global climate politics (see Chen 2012; Malm 2012)⁵⁵. Other major players that are nearly absent are India, with three organizations, and Japan and South Africa with one each; no organizations are located in Brazil or Russia. In its social base, the climate capitalist project again appears to be almost exclusively North Atlantic, reaching in a very limited way to the fast growing economies of the BRICS, whose GHG emissions are fast rising (Bergmann 2013; Jorgenson 2012; Prell et al. 2014).

⁵⁵ This is perhaps unsurprising, given the statist character of China (Brødsgaard 2012; Harris 2012). However, many authors report an increase in NGO presence and greater civil society activity in the recent years, especially regarding growing environmental issues (Geall 2013; Hsu 2010; Morton 2005). Thus, more linkages would be expected if the climate capitalist project had better established roots in China.

For its part, the densely connected 10-core is composed exclusively of organizations located in the North Atlantic, except for one, the UN Environment Programme (UNEP) located in Nairobi, Kenya (see Table 18). European organizations make up two-thirds of the 10-core, and North-American ones make up the remainder. In general, groups located in core Europe are significantly more likely to be located in the 10-core than those from any other region ($t=4.769$, $p<0.05$, 10,000 permutations). As to the countries present in the 10-core, France and Switzerland stand out, making up respectively 16.7% and 19.4% of the 10-core, as they host many IGOs and internationally oriented NGOs.

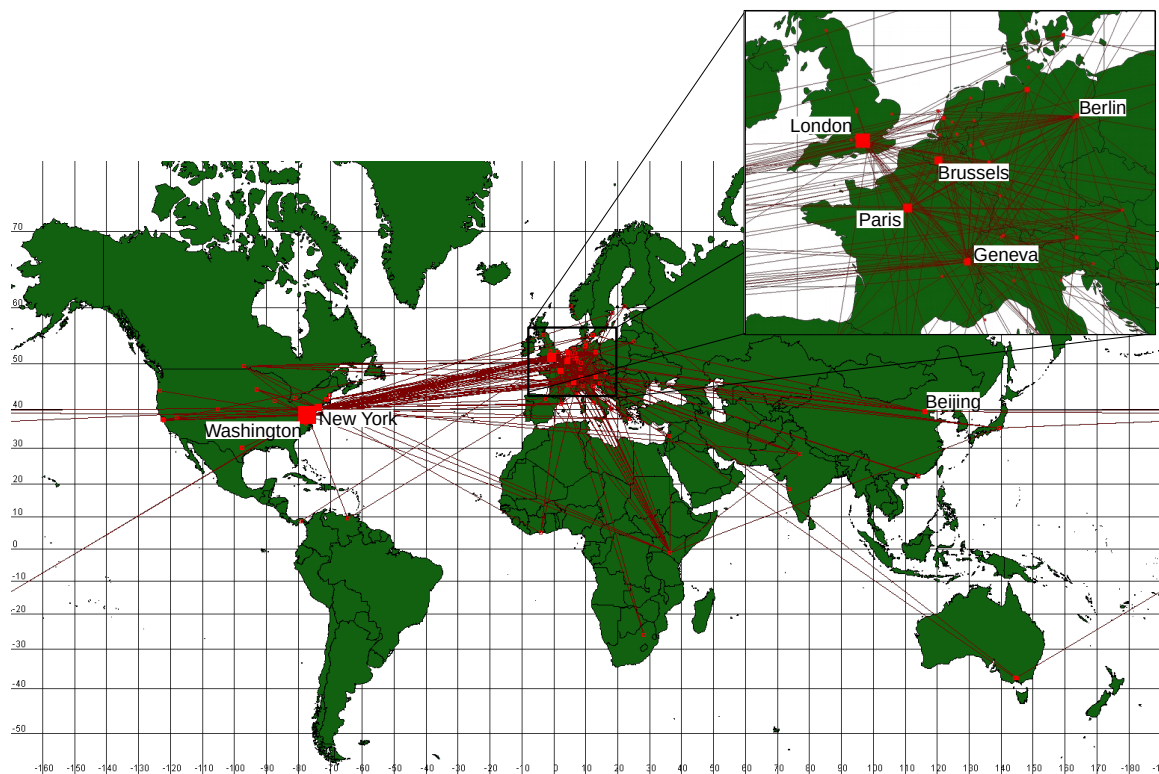


Figure 8. Geographical scope of CEPGs' collaboration network

Comparing the regional reach of the different CEPGs, we find varied patterns, presented in Table 19. The external minus internal (E-I) index provides a measure of whether and how much each node's links are directed within its own region (introverted) or to other regions (extraverted). It indicates the extent to which external links (E) predominate compared to internal links (I), and varies between 1 and -1^{56} . Positive values thus indicate extraversion, negative values indicate introversion (Krackhardt and Stern

⁵⁶ In equation form, $(E-I)/(E+I)$.

1988). According to their respective E-I indices shown in Table 19⁵⁷, all CEPGs but two maintain a greater number of links with organizations located in their region than in other regions. Six of them are deeply anchored within their own region, where over 70% of their collaborators are also based. Nonetheless, the Climate Group, e5, the IETA and the

Table 18. Location of headquarters of organizations directly linked to CEPGs

| Country | Whole network | | 10-core only | |
|--------------------------------|---------------|---------------|--------------|---------------|
| | N | % | N | % |
| <i>Core North America</i> | | | | |
| USA | 103 | 41.7% | 11 | 30.6% |
| Canada | 2 | 0.8% | 1 | 2.8% |
| <i>Core Europe</i> | | | | |
| UK | 29 | 11.7% | 3 | 8.3% |
| Germany | 17 | 6.9% | 2 | 5.6% |
| France | 13 | 5.3% | 6 | 16.7% |
| Netherlands | 11 | 4.5% | 0 | 0.0% |
| Belgium | 10 | 4.1% | 2 | 5.6% |
| Switzerland | 10 | 4.1% | 7 | 19.4% |
| Italy | 5 | 2.0% | 1 | 2.8% |
| Austria | 4 | 1.6% | 2 | 5.6% |
| Other core Europe | 14 | 5.7% | 0 | 0.0% |
| <i>Core Asia/Oceania</i> | | | | |
| China | 8 | 3.2% | 0 | 0.0% |
| Australia | 5 | 2.0% | 0 | 0.0% |
| Japan | 1 | 0.4% | 0 | 0.0% |
| <i>Non-core countries</i> | | | | |
| India | 3 | 1.2% | 0 | 0.0% |
| Sub-Saharan Africa | 3 | 1.2% | 1 | 2.8% |
| Eastern Europe and Middle East | 3 | 1.2% | 0 | 0.0% |
| Latin America | 2 | 0.8% | 0 | 0.0% |
| Missing or multiple locations | 4 | 1.6% | 0 | 0.0% |
| <i>Total</i> | <i>247</i> | <i>100.0%</i> | <i>36</i> | <i>100.0%</i> |

WBCSD, all located in Europe, reach out in a large proportion to the other side of the Atlantic, although they still maintain around half of their collaborations in their home region. For their part, three of the four North American groups are almost totally introverted, linking with other North American organizations 85% of the time or more. The only exception is the Global Compact, which is headquartered in New York but reaches out mostly to Europe, where many IGO collaborators are located. The Global

⁵⁷ Calculated on the basis of the four categories typology of regions presented in Table 18 and Table 19.

Compact and the Climate Group are the only CEPGs that maintain any substantial links to core Asia, with three and five links respectively. These two groups and the WBCSD also have a small number of links to organizations located outside the capitalist core.

Table 19. Regional composition of CEPGs' collaboration ego-network

| CEPG | Size | North America ^a | Western Europe ^a | Core Asia/Oceania ^a | Non-core countries ^a | Heterogeneity ^b | E-I index |
|-----------------------|------|----------------------------|-----------------------------|--------------------------------|---------------------------------|----------------------------|-----------|
| <i>North America</i> | | | | | | | |
| BCSE | 41 | 36 (88) | 4 (10) | 1 (2) | 0 (0) | 0.219 | -0.756 |
| C2ES | 42 | 36 (86) | 5 (12) | 1 (2) | 0 (0) | 0.251 | -0.714 |
| GEMI | 13 | 11 (85) | 2 (15) | 0 (0) | 0 (0) | 0.260 | -0.692 |
| Global Compact | 30 | 8 (27) | 16 (53) | 3 (10) | 3 (9) | 0.626 | 0.467 |
| <i>Western Europe</i> | | | | | | | |
| CCC | 11 | 2 (18) | 8 (73) | 1 (9) | 0 (0) | 0.430 | -0.455 |
| Climate Group | 46 | 12 (26) | 25 (54) | 5 (11) | 4 (8) | 0.618 | -0.087 |
| Club of Rome | 12 | 0 (0) | 10 (83) | 1 (8) | 1 (8) | 0.293 | -0.667 |
| e5 | 18 | 7 (39) | 9 (50) | 0 (0) | 2 (10) | 0.589 | 0.000 |
| Global Climate Forum | 39 | 1 (3) | 36 (92) | 2 (5) | 0 (0) | 0.145 | -0.846 |
| IETA | 9 | 4 (44) | 5 (56) | 0 (0) | 0 (0) | 0.494 | -0.111 |
| WBCSD | 47 | 18 (38) | 25 (53) | 0 (0) | 4 (8) | 0.564 | -0.064 |

^a Row percentages in brackets.

^b Higher heterogeneity scores represent a more regionally diverse neighbourhood.

In sum, several CEPGs spread their links across both North America and Europe and thus can play a role in building solidarity around climate capitalism in the two regions. Other groups are solidly anchored within their regional networks and thus may contribute to creating regional cohesion around the project. Only three groups, the Climate Group, the Global Compact and the WBCSD, have any substantial collaborations outside Europe and North America, confirming the specifically North Atlantic character of climate capitalism and the limited reach of the project into the global South. These three groups can be said to play a crucial role in fostering support from the rest of the world for the project, including within NGOs and civil society organizations in China, a country that weighs heavily in the field of global climate politics (see Held et al. 2013; Roberts 2011).

The analyses presented in this section have examined the structure of the network formed by organizations with which CEPGs maintain collaborative relations. I have shown that CEPGs play a particular role within that network, linking to hegemonic

international organizations on the one hand, and on the other hand with smaller, less well connected organizations. Regionally, some CEPGs, mostly located in Europe, bridge across regions whereas other CEPGs are more deeply connected within their own region. A small number only maintain links outside the North Atlantic. This evidence suggests CEPGs play an important role in bringing together organizations around the project of climate capitalism, although their limited penetration outside the North Atlantic will constrain the potential for the project to mobilize a broad support base.

Networks of climate capitalist KPM

After discussing the reach of the climate capitalist project within the field of global politics, this section looks at the organizational composition of CEPGs' networks of collaborations. The goal of this section is twofold. I will first discuss the various types of organizations CEPGs link with, focusing on major private foundations and IGOs. This is not so much to emphasize CEPGs' brokerage capacity, which is not necessarily relevant in the case of internationally oriented organizations that often already network together, but rather to understand their position in the wider field of global politics and their relationships with the main organizations present in it. Second, I will look at the different issues CEPGs' collaborators mainly address, to understand whether CEPGs are strictly embedded in a network of organizations interested in climate change, or if they do reach out to organizations working in different policy areas. This will again shed some light on the actual reach of the climate capitalist project within global politics.

International organizations

CEPGs collaborate with a wide variety of international organizations, as Table 16 (page 130 above) illustrates. As shown in Table 20, CEPGs link in the greatest part to other policy groups, think tanks and lobby groups (n=53, 21.5%) and to IGOs (n=51, 20.7%), although they also maintain links with many NGOs or non-profit groups (n=46, 18.6%) and research organizations (n=37, 15.0%). Finally, CEPGs link to a lesser extent to corporate sector organizations, business associations (n=25, 10.1%) and philanthropic foundations (n=21, 8.5%). This general pattern of linkages is consistent with the KPM mission of CEPGs that leads them to establish connections with, on the one hand, other

knowledge producers who also “make the case” for climate capitalism, and on the other hand IGOs, NGOs and foundations who provide capacity to implement the climate capitalist project. Looking at the densest zone of the network, its 10-core, we find that research organizations, business associations and foundations disappear to leave mostly a core of IGOs, with a small number of NGOs, as well as policy groups, think tanks and lobbies (as discussed above, see Table 16, page 130).

Table 20. Type of organizations with which CEPGs maintain links

| Organization type | Whole network | | 10-core only | |
|--|---------------|---------------|--------------|---------------|
| | N | % | N | % |
| Policy groups, think tanks, lobby groups | 53 | 21.5% | 5 | 15.6% |
| IGOs and state agencies | 51 | 20.7% | 21 | 65.3% |
| NGOs and CSOs | 46 | 18.6% | 6 | 18.8% |
| Research organizations | 37 | 15.0% | 0 | 0.0% |
| Business associations | 25 | 10.1% | 0 | 0.0% |
| Foundations | 21 | 8.5% | 0 | 0.0% |
| <i>Total</i> | <i>247</i> | <i>100.0%</i> | <i>32</i> | <i>100.0%</i> |

Looking at the composition of each CEPG’s neighbourhood in terms of the types of organizations they collaborate with provides us with more detail about the organizational ecology CEPGs are embedded in. The heterogeneity scores presented in Table 21 show that most groups collaborate with a diversity of organizations. The only two exceptions are the CCC which links almost exclusively (82%) with other policy groups, think tanks and lobby groups, and the IETA whose only collaborations are restricted to policy groups, think tanks and lobby groups (44%), and to IGOs and state agencies (56%). In general, all CEPGs link with policy groups, think tanks and lobby groups – organizations that are also centrally involved in KPM activities. They also all have substantial links with IGOs and state agencies except the CCC and the GEMI. Only the BCSE and the WBCSD connect strongly with business associations. The BCSE links with 13 different business associations, making up 32% of its neighbourhood. Only three CEPGs link with foundations in any meaningful way: the C2ES links to nine of them, 21% of its total links, the Climate Group links to 10, 22% of its links, and the Global Climate Forum to three, 8% of its links. Finally, more than half of the Global Climate Forum’s neighbourhood is made up of research organizations, reflecting its embeddedness

primarily in academic networks. These observations offer some sense of CEPGs' networking strategies. The majority of CEPGs link with other KPM organizations as well as with IGOs: they are as a consequence positioned at the heart of the global policy process. As well, most CEPGs collaborate with NGOs, suggesting that their efforts to promote the climate capitalist project have led to seek collaborators in global civil society as part of the process of producing and mobilizing knowledge.

Table 21. Organizational composition of CEPGs' collaboration ego-network

| CEPG | Size | Policy/ lobby group ^a | Business assoc. ^a | Founda- tion ^a | IGO/ state agency ^a | NGO ^a | Research ^a | Hetero- geneity ^b |
|----------------------------------|------|--|---------------------------------|------------------------------|--------------------------------------|------------------|-----------------------|---------------------------------|
| <i>Climate capitalist groups</i> | | | | | | | | |
| BCSE | 41 | 11 (27) | 13 (32) | 1 (2) | 11 (27) | 5 (12) | 0 (0) | 0.740 |
| C2ES | 43 | 11 (26) | 1 (2) | 9 (21) | 10 (23) | 6 (14) | 6 (14) | 0.797 |
| CCC | 11 | 9 (82) | 0 (0) | 0 (0) | 0 (0) | 1 (9) | 1 (9) | 0.314 |
| Climate Group | 46 | 10 (22) | 3 (7) | 10 (22) | 15 (33) | 5 (11) | 3 (7) | 0.779 |
| e5 | 18 | 2 (11) | 1 (6) | 0 (0) | 9 (50) | 6 (33) | 0 (0) | 0.623 |
| Global Cl. Forum | 39 | 7 (18) | 0 (0) | 3 (8) | 5 (13) | 2 (5) | 22 (56) | 0.625 |
| IETA | 9 | 4 (44) | 0 (0) | 0 (0) | 5 (56) | 0 (0) | 0 (0) | 0.494 |
| <i>Green capitalist groups</i> | | | | | | | | |
| Club of Rome | 12 | 2 (17) | 0 (0) | 0 (0) | 3 (25) | 6 (50) | 1 (8) | 0.653 |
| GEMI | 13 | 5 (38) | 0 (0) | 0 (0) | 1 (8) | 6 (46) | 1 (8) | 0.627 |
| Global Compact | 30 | 8 (27) | 2 (7) | 1 (3) | 9 (30) | 7 (23) | 3 (10) | 0.769 |
| WBCSD | 47 | 15 (32) | 6 (13) | 0 (0) | 15 (32) | 11 (23) | 0 (0) | 0.725 |

^a Row percentages in brackets.

^b Higher heterogeneity scores indicate a more diverse neighbourhood.

The case of foundations deserves some in-depth attention, given the crucial importance of these organizations' allocative power in steering the field of global politics, as evidenced by their support of the successive hegemonic projects of the global corporate elite in the course of the twentieth century (Arnove 1980; Guilhot 2007; Parmar 2002, 2012b). As mentioned above, only three CEPGs collaborate substantially with foundations. This is due to the fact that many CEPGs are organized as business associations, and thus receive the majority of their funding directly through corporate membership dues and thus do not rely on foundation money for their activities; this is the case for the BCSE, the IETA, the GEMI and the WBCSD. Two others receive funding from foundations with which they have a direct privileged link: the Global Compact set

up the Foundation for the Global Compact to receive corporate donations, and the C2ES was originally founded by the Pew Charitable Trusts, under the name Pew Center on Global Climate Change.

Looking at the foundations to which CEPGs link, listed in Table 22, we find that only two foundations partner with multiple CEPGs, the United Nations Foundation and the Rockefeller Brothers Fund. The UN Foundation, endowed and chaired by media tycoon Ted Turner, directly funds certain UN activities, and promotes business involvement in the UN process through its Business Council for the United Nations initiative⁵⁸. It also supports an energy and climate program that focuses on climate change, energy efficiency and energy accessibility. The Rockefeller Brothers Fund is one of three foundations established from the Rockefeller family fortune. One of the fund's programs pertains to sustainable development. Its website self-presentation integrates a sustainability lens throughout, and indicates a priority to foster partnerships between governments, business and civil society.

As to the other foundations, they represent a mixed bag. On the one hand, there are older foundations supporting the C2ES that are based in the US and endowed with oil money, such as the American Clean Skies Foundation, the Doris Duke Charitable Foundation, the Cynthia and George Mitchell Foundation and the Pew Charitable Trusts. These all allocate some funds toward an energy transition that would increase the part of renewables in the global energy mix over the long term, and toward addressing the negative impacts of fossil fuel extraction and burning.

On the other hand, another group of foundations, such as the Energy Foundation, the Prince Albert II of Monaco Foundation, the European Climate Foundation, the Wallace Global Fund and Zennström Philanthropies, most of them recently established, are specifically dedicated to promoting environmental sustainability and renewable energy. The environmentalist stance of the foundations collaborating with CEPGs varies, ranging from a purely conservationist orientation⁵⁹ for the Doris Duke and the Esmée Fairbairn

⁵⁸ This discussion is based on material published on each foundation's website, consulted on August 12, 2014.

⁵⁹ In the sense of a strict focus on maintaining natural areas from which humans are excluded, with a conception of nature as separate from human beings.

foundations, to a more complex understanding of environmental depletion linking it to the increasing concentration of corporate power in the case of the Wallace Global Fund. Despite their varied outlooks, however, most of the foundations discussed here adopt in

Table 22. Foundations linked to CEPGs

| Foundation | CEPG(s) | Headquarters | Area(s) of activity |
|--|---------------------------|---------------------|--|
| United Nations Foundation | BCSE, C2ES, Climate Group | Washington, D.C. | International development and human rights |
| Rockefeller Brothers Fund | C2ES, Climate Group | New York | International development and human rights, Environmental sustainability |
| Alcoa Foundation | C2ES | New York | International development and human rights |
| American Clean Skies Foundation | C2ES | Washington, D.C. | Climate change, Non-fossil energy |
| Doris Duke Charitable Foundation | C2ES | New York | International development and human rights |
| Energy Foundation | C2ES | San Francisco | Non-fossil energy |
| Cynthia and George Mitchell Foundation | C2ES | Austin, TX | Environmental sustainability |
| Pew Charitable Trusts | C2ES | Philadelphia | Policy planning and international affairs |
| Wallace Global Fund | C2ES | Washington, D.C. | International development and human rights, Environmental sustainability |
| China Green Foundation | Climate Group | Beijing | Environmental sustainability |
| Esmee Fairbairn Foundation | Climate Group | London | International development and human rights |
| Nationale Postcode Loterij | Climate Group | Amsterdam | International development and human rights |
| One Foundation | Climate Group | Shenzhen | International development and human rights |
| Prince Albert II of Monaco Foundation | Climate Group | Monaco | Environmental sustainability |
| RBS Foundation | Climate Group | Edimburg | International development and human rights |
| William J. Clinton Foundation | Climate Group | New York | Climate change |
| Zennström Philanthropies | Climate Group | London | International development and human rights, Environmental sustainability |
| European Climate Foundation | Global Cl. Forum | The Hague | Climate change |
| Stiftung Mercator | Global Cl. Forum | Essen, Germany | Policy planning and international affairs |
| Nordcapital Stiftung | Global Cl. Forum | Hamburg | International development and human rights |
| Foundation for the Global Compact | Global Compact | New York | Corporate social responsibility and corporate governance, Environmental sustainability |

their discourse and philanthropy a weak ecological modernization perspective that promotes strengthening economic growth through a long-term transformation of the energy system.

Besides foundations, IGOs are of course major players in global politics, as they wield considerable power to design and enact various projects, and have the capacity to allocate funding to other globally active organizations. Table 23 lists the IGOs that collaborate with multiple CEPGs. These are the most relevant IGOs for understanding the reach of climate capitalism in global politics. Six of the eleven CEPGs maintain collaborations with the UNFCCC secretariat, in charge of organizing the bi-yearly COPs where official climate negotiations take place. Five CEPGs link to the International Bank for Reconstruction and Development (IBRD), the main agency of the World Bank Group; two CEPGs link to another World Bank Group agency, the International Finance Corporation (IFC)⁶⁰. The World Bank and associated agencies play a core role in administering the sums of money contributed by states to support GHG emissions reductions or global warming adaptation projects⁶¹. These funds are partly managed through the Global Environmental Facility (GEF) with which two CEPGs also link. Four CEPGs also collaborate with the UN Development Programme (UNDP) and the UN Environmental Programme (UNEP) who, together with the World Bank Group agencies, are responsible for the governance of the GEF⁶². Thus, multiple UN agencies collaborate closely in climate governance, which consists in large part in administering and allocating funds to climate mitigation and adaptation projects. That CEPGs establish collaboration with these UN agencies may indicate their interest in channeling climate funds toward the implementation of the climate capitalist project. The other way around, the collaborations also denote an interest on the part of UN agencies in participating in climate capitalism and providing it with funding.

Two other governmental organizations collaborate extensively with multiple CEPGs. The first one, the OECD, has long been involved in elaborating climate capitalism (see

⁶⁰ The IBRD is often referred to as the “World Bank”; however, the World Bank Group comprises five distinct agencies, two of which are the IBRD and the IFC.

⁶¹ This discussion is based on information on each organization found in the *YBIO*.

⁶² On the crucial role the GEF plays in global environmental finance, see Young (2002).

Chapter 2). Its Roundtable on Sustainable Development acts as a policy-planning venue in which environment ministers from member countries participate, and to which other high-level politicians, corporate executive and NGO heads are invited, depending on the topics discussed. Both the C2ES and the WBCSD have participated in such meetings in the past, although no information is available as to the content of the meetings or about these groups' on-going participation. Second, the BCSE and the C2ES collaborate with the US Environmental Protection Agency (EPA). The agency plays a crucial regulatory role within the United States, and is thus an important lobbying target for the corporate sector, as climate capitalist KPM oftentimes involves participating in drafting environmental regulation to ensure its compatibility with the process of accumulation.

Table 23. IGOs linking to multiple CEPGs

| IGO | CEPGs | Area(s) of activity |
|---|--|--|
| UNFCCC Secretariat | C2ES, Climate Group, e5, Global Climate Forum, IETA, WBCSD | International climate change negotiations |
| International Bank for Reconstruction and Development (IBRD) ^a | BCSE, Climate Group, e5, IETA, WBCSD | Economic development |
| UN Development Programme (UNDP) | Climate Group, e5, Global Compact, WBCSD | International development |
| UN Environment Programme (UNEP) | Climate Group, e5, Global Compact, WBCSD | Sustainable development |
| International Finance Corporation (IFC) ^a | BCSE, e5, WBCSD | Promotion of market liberalization in non-core countries |
| OECD | C2ES ^b , e5, WBCSD ^b | Economic growth and market liberalization |
| Global Environmental Facility (GEF) | C2ES, e5 | International environmental finance |
| US Environmental Protection Agency (EPA) | BCSE, C2ES | Environmental regulation |

^a Members of the World Bank Group. The World Bank is also co-responsible for implementing the activities of the GEF, together with the UNDP and the UNEP, and is the repository of the GEF Trust Fund, that supports activities in the GEF's focal areas.

^b The C2ES and the WBCSD have participated in past meetings of the OECD Roundtable on Sustainable Development.

Thus, CEPGs maintain the most extensive links with IGOs that on the one hand manage access to climate finance and on the other hand are involved in drafting environmental regulation. But more than a source of funding and target of influence, many of these organizations, especially the OECD and the World Bank agencies, represent core hegemonic agencies, and have been involved very closely in the turn to

neoliberalism during the 1980s, in the capture of climate politics away from grassroots activism, and in the creation of a climate capitalist project subordinated to neoliberal ideology, as explained in Chapter 2.

Fields of activity

I will discuss here how CEPGs are positioned among the multiple substantive issues addressed by organizations in their immediate neighbourhood. This will allow for an assessment of the extent to which CEPGs reach out beyond their own fields of activity to other topic areas. I will focus especially on energy and economic growth, as the climate capitalist project directly integrates these two fields.

I coded each organization present in CEPGs' first-order neighbourhood according to the main issues each addresses. Table 24 presents the frequency distribution of general issues addressed. Unsurprisingly, sustainable development and global warming are the two issues addressed by the most organizations, with respectively 51 organizations (20.7%) and 37 organizations (15.0%). Twenty-two organizations, representing 8.9% of

Table 24. Substantive issues addressed by organizations directly linking with CEPGs

| Field of activity | Whole network | | 10-core only | |
|---------------------------------------|---------------|---------------|--------------|---------------|
| | N | % | N | % |
| Environment and sust. development | 51 | 20.6% | 10 | 31.3% |
| Climate change | 37 | 15.0% | 2 | 6.3% |
| Business and economic growth | 36 | 14.6% | 12 | 37.5% |
| Renewable energy, energy efficiency | 21 | 8.5% | 1 | 3.1% |
| Non-renewable energy | 17 | 6.9% | 1 | 3.1% |
| Business ethics, corporate governance | 12 | 4.9% | 1 | 3.1% |
| Others ^a | 65 | 26.3% | 3 | 9.4% |
| Not applicable ^b | 8 | 3.2% | 2 | 6.3% |
| <i>Total</i> | <i>247</i> | <i>100.0%</i> | <i>32</i> | <i>100.0%</i> |

^a Includes policy planning, international affairs, international development and human rights, education, health, social issues, and science and technology.

^b Includes universities and generalist IGOs such as the United Nations or the European Union.

the network, focus on business-related issues and 14, or 5.7% of the network, are concerned with economic growth and competitiveness. Twenty-one (8.5%) address renewable energy and energy efficiency, whereas 17 (6.9%) focus on non-renewable energy. Thus, beyond issues of environmental sustainability, a large complement of the

organizations in the network is interested in issues generally associated with a weak ecological modernization paradigm – such as business, economic growth or non-renewable energy generation (n=53, 21.5%). However, the categories associated with sustainability, environmental and sustainable development, global warming, renewable energy and energy efficiency, outnumber the former with 109 organizations (44.1%). This is in sharp contrast with the inter-corporate network where corporations dealing exclusively in the renewable energy sector had only a minimal presence (Chapter 4). Looking only at the organizations that are part of the dense 10-core of the network, the distribution appears quite different. The proportion of sustainable development organizations goes up to 31.3%, while climate change organizations are down to 6.3%. At the same time, organizations addressing business and economic growth issues are far more present, making up 37.5% of the 10-core. The specific organizations making up the 10-core are listed in Table 16 above (page 130).

As Table 25 shows, CEPGs do not differ much in the pattern of links with different fields of activity. Unsurprisingly, all of them maintain substantial collaborations with organizations dedicated to environmental issues and sustainable development, and the specifically climate capitalist groups also link extensively with other organizations mainly addressing climate change. The BCSE stands out slightly by the volume of its links to the energy sector compared to other CEPGs. It maintains collaborations with 11 non-renewable energy organizations and 10 addressing renewable energy and energy conservation issues. Most groups also collaborate with organizations dedicated to issues regarding the business world and general economic growth, thus linking the latter with environmental and climate change organizations. Except for the Global Compact, which has for its main mandate the promotion of corporate social responsibility (CSR), no other group has substantial links to business ethics and governance organizations. Finally, most CEPGs also link to organizations active in other fields, thereby demonstrating their reach beyond the strict issues of climate change and environmental sustainability which are their main concern.

Table 26 lists the organizations that link to more than two CEPGs. Most of these are active in the fields of sustainable development and business. The World Wildlife Fund

(WWF) and the World Resources Institutes (WRI) are two major globally active environmental groups. The WWF was founded in 1961 as a fundraising organization to support financially the conservation movement, and has since expanded its mandate to lead campaigns of its own. The WRI functions as a think tank and policy-planning group and produces research and reports on environmental issues of global relevance. Both collaborate extensively with transnational corporations to provide guidance as to

Table 25. Field of activity of CEPGs collaborators

| CEPG | Size | Environ- ment/ sustaina- bility | Climate change | Non- renew- able energy | Renewable energy/ energy efficiency | Business/ econ. growth | Business ethics/ corporate governance | Others ^a | Hetero- geneity ^b |
|----------------------------------|------|--|-------------------|----------------------------------|--|------------------------------|--|---------------------|---------------------------------|
| <i>Climate capitalist groups</i> | | | | | | | | | |
| BCSE | 41 | 7 (17) | 5 (12) | 11 (27) | 10 (24) | 5 (12) | 0 (0) | 3 (7) | 0.804 |
| C2ES | 43 | 10 (23) | 10 (23) | 3 (7) | 3 (7) | 0 (0) | 0 (0) | 17 (40) | 0.726 |
| CCC | 11 | 5 (45) | 2 (18) | 0 (0) | 2 (18) | 1 (9) | 0 (0) | 1 (9) | 0.711 |
| Climate Group | 46 | 10 (22) | 9 (20) | 0 (0) | 4 (9) | 6 (13) | 1 (2) | 16 (35) | 0.768 |
| e5 | 18 | 4 (22) | 2 (11) | 0 (0) | 3 (17) | 3 (17) | 0 (0) | 6 (33) | 0.772 |
| Global Cl. Forum | 39 | 7 (18) | 17 (44) | 1 (3) | 1 (3) | 0 (0) | 0 (0) | 13 (33) | 0.665 |
| IETA | 9 | 2 (22) | 3 (33) | 1 (11) | 1 (11) | 2 (22) | 0 (0) | 0 (0) | 0.765 |
| <i>Green capitalist groups</i> | | | | | | | | | |
| Club of Rome | 12 | 2 (17) | 0 (0) | 0 (0) | 1 (8) | 0 (0) | 0 (0) | 9 (75) | 0.403 |
| GEMI | 13 | 8 (62) | 0 (0) | 0 (0) | 0 (0) | 2 (15) | 0 (0) | 3 (23) | 0.544 |
| Global Compact | 30 | 3 (10) | 2 (7) | 0 (0) | 0 (0) | 8 (27) | 9 (30) | 8 (27) | 0.753 |
| WBCSD | 47 | 17 (36) | 6 (13) | 3 (6) | 0 (0) | 15 (32) | 2 (4) | 4 (9) | 0.738 |

^a Includes policy planning, international affairs, international development and human rights, education, health, social issues, and science and technology.

^b Higher heterogeneity scores indicate a more diverse neighbourhood.

reducing the impacts of industrial production on the natural world. The Greenhouse Gas Protocol Initiative (GHGPI) is a joint venture of the WRI and the WBCSD that regroups a coalition of business organizations and NGOs; its aim is to develop standardized GHG accounting procedures and tools. Finally, the World Economic Forum (WEF) has been since its inception in 1987 one of the main proponents of neoliberal globalization. Its annual meetings in Davos, Switzerland regroup a highly select group of corporate, political and other elites. Since 1997, its discourse has moved toward a neoliberal structuralist view that supports a modicum of regulation to contain the worse excesses of globalized capitalism. As part of this transition, the WEF has put in place multiple initiatives touching on corporate social responsibility and environmental issues, including

climate change (Carroll and Carson 2003:74–75). Organizations linking to two CEPGs (not shown in the table) include other large environmental groups such as the Environmental Defense Fund, the Natural Resources Defense Council and The Nature Conservancy, as well as energy focused corporate lobbies like the American Gas Association and the World Energy Council.

Table 26. NGOs and business organizations linking to more than two CEPGs

| Organization | CEPGs linked | Goals/Agenda |
|--|---------------------------------------|---|
| World Wildlife Fund (WWF) | e5, Global Climate Forum, IETA, WBCSD | <ul style="list-style-type: none"> • Environmental conservation; • Work with large firms to reduce their environmental impacts; • Initial mandate to provide financial support for the conservation movement. |
| Greenhouse Gas Protocol Initiative (GHGPI) | C2ES, IETA, WBCSD | <ul style="list-style-type: none"> • Design and dissemination of GHG accounting tools/reporting standards; • Founded by the WBCSD and the WRI as a coalition of business associations, NGOs and governmental organizations. |
| World Economic Forum (WEF) | CCC, Global Compact, WBCSD | <ul style="list-style-type: none"> • Major global business forum and policy-planning venue; • Foster discussion, debate and consensus formation around issues facing globalized capitalism. |
| World Resource Institute (WRI) | BCSE, GEMI, WBCSD | <ul style="list-style-type: none"> • Environmental KPM; • Collaborates closely with business groups. |

What we find when we examine the groups with which CEPGs collaborate is that the network of CEPGs comprises organizations active to address multiple issues. Their scope goes beyond strictly climate capitalist or even environmental organizations, meaning that CEPGs' projects have a certain degree of purchase beyond these restricted circles. As I explained, it does reach into the core of hegemonic organizations, especially World Bank agencies and other IGOs charged with administering the international funds dedicated to addressing climate change. CEPGs also link with multiple business oriented organizations promoting economic growth, which is consistent with their project in conceiving economic growth and climate change mitigation as mutually reinforcing. *The structure of the network is hence evidence that the climate capitalist project does have important support from core global hegemonic institutions.* However, many private sources of CEPG funding in the United States are supported by oil money, and promote a *slow transition* away from fossil fuels; this further confirms observations discussed in

Chapter 4 that in its current form, climate capitalism is a project that involves a long-term reorganization of energy use and economic relations along the lines of a weak ecological modernization paradigm.

Conclusions

In this chapter, I sought to determine whether an inter-organizational basis exists for climate capitalism to develop within the network of IGOs, corporate organizations and NGOs that constitutes what I have called the field of global politics. First, looking at the overall structure of the network, I have found a densely connected core of IGOs, business organizations and large NGOs. With the exception of the WBCSD, CEPGs do not occupy the core of the network, yet they tie directly into the core, and thus occupy intermediary locations between the core and a large number of more locally-oriented peripheral organizations. CEPGs are thus well positioned on the one hand, to promote and potentially co-produce climate capitalist knowledge with core IGOs, business groups and large NGOs, while on the other hand they can bring into the climate capitalist project organizations that are further removed from the main locus of global politics.

Second, I examined regional linkage patterns and found that the network is overall almost entirely located within the North Atlantic, with a small number of links to China and minimal connections to other regions. Moreover, the dense core is exclusively North Atlantic with a heavy participation of European organizations. Several CEPGs, all of them based in Europe, maintain links to organizations in both North America and Europe, which can enable them to build solidarity across the Atlantic. Other groups are anchored in regional networks, in which they can create cohesion on a smaller scale. Only a few groups link at all with organizations based in the global South, in a very small volume. These findings show that climate capitalism, although well anchored in core capitalist countries of the North Atlantic, still has minimal purchase in the rest of the world. This finding is consistent with van der Pijl's (1984, 1998) classic account, which identifies the North Atlantic region as the "heartland" of global capitalism. As a hypothesis, the project of climate capitalism may express a will to strengthen North Atlantic rule in the global order.

Third, I examined how CEPGs link to the main foundations and IGOs of the network. Although most CEPGs rely on direct corporate funding for their functioning, I found that three of them, the C2ES, the Climate Group and the Global Climate Forum, do partner with private philanthropic foundations. These partner foundations are a mixed group, as some of them represent old American oil money while others are recently established organizations dedicated to conservation and environmental causes. As to their linkages with IGOs, I found that CEPGs most often collaborate with those involved in climate finance, especially agencies of the World Bank Group and others involved in managing the Global Environmental Facility, in turn responsible for managing international funds destined to climate and other environmental issues. Thus, *CEPGs* link strongly to sources of funding, in line with the crucial climate capitalist goal of reallocating part of the global surplus value to support the expansion of the renewable energy sector. Fourth, I examined the extent to which CEPGs maintained collaborations outside of their own specific issue area, and found that their networks reach extensively both to other climate and environmental organizations and to other fields of activity, especially to energy focused organizations from the renewable and non-renewable energy sectors.

Relating back to the main question of this chapter, *the organizational infrastructure seems to exist to support the expansion of climate capitalism as a hegemonic project*, in the form of a network of collaborations between various organizations. CEPGs link with many organizations that are part of the apparatus of world-system governance, UN agencies, the OECD, and the WEF. They are also linked with potential sources of funding: the World Bank and its agencies on the one hand, and private foundations on the other hand, that could all support a transition to a climate capitalist regime.

In closing this chapter, I must note two limitations inherent to the data. First, the information about the actual contents of the relations observed is limited. Most are described as collaborations or flows of various sorts, and thus indicate that substantive linkages between organizations do exist. But the strength of these links remains unknown, and many might in reality constitute only one-off collaborations or the funding of projects bounded in time. In this way, the data might overestimate the level of cohesion found in the networks. Second however, the *YBIO* is not exhaustive and various

links go unreported, especially for smaller organizations, as noted at the beginning of the chapter, with the consequence of underestimating certain linkages. Third, and maybe more importantly, the ego-network methodology does not allow to estimate quantitatively the place that organizations collaborating with CEPGs occupy in the whole of the global politics field, as there is no available point of comparison. Some qualitative inferences suggest that CEPGs do link with major hegemonic organizations at the top, but it is not possible to evaluate their reach to other less central organizations as a proportion of those that they do not link with. In sum, a social architecture appears to be present, that regroups organizations involved in constructing a regime of climate capitalism, although its overall weight in the global political field remains hard to assess precisely. Moreover, looking more broadly at the struggles taking place in the field, the main question that remains and that is not addressed in this work is that of the relative power of the climate capitalist project in the face of opposing forces – the conservative elements regrouped into the denial movement as well as the variegated groups that make up the climate justice movement.

Chapter 6. Conclusion

This study had two objects. It was, first, an investigation of elite social organization. Second, it was an enquiry into the metabolic relationship between humans and nature. Greater consciousness of the expanding rift in the metabolic relationship has pushed the global corporate elite to react, as the stability of the biogeochemical cycles that provide the conditions for capital accumulation have now come under threat. In response to climate change, certain members of the global elite have designed the project of climate capitalism that holds the promise of a smooth transition out of the crisis and into a new era of accumulation, on renewed, ecologically modernized foundations. However, this project has been contested from the start. On one side, many still do not accept that there exists any problem that needs addressing in the first place. At the other end of the spectrum, climate capitalism is challenged on the grounds of its incapacity to reduce GHG emissions and its complicity with neoliberalism in entrenching global inequality. Debates abound about the latter point of view. The main goal of this study was to illuminate these debates about how climate capitalism purports to tackle climate change through an empirical analysis of the way the global corporate elite organizes around climate capitalism as a hegemonic project.

This study first addressed the question of how the global corporate elite approaches climate capitalism. It found that for the most part the main organizations active in constructing the project rally to a neoliberal structuralist strategy. They support a minimal regulation of global capitalism as a way of avoiding or mitigating the destabilizing crises to which this regime is prone. Confirming other critical research on the topic, the study found that the organizations of climate capitalism are deeply committed to the neoliberal regime. Their hegemonic project serves to ensure the continued dominance of corporate capitalism by alleviating certain of its most destructive aspects. This was further confirmed by the qualitative account of the views expressed publicly by corporate members of the climate capitalist inner circle. A very small number among them express a true commitment to addressing climate change in a timely way. Even then, their range of actions is restricted by the requirements of maintaining corporate profits. By virtue of

their position, CEOs are bound to a climate capitalism based on a weak ecological modernization strategy, unfolding over the long term. Thus, even though organizational and structural constraints on individual decisions allow for a certain margin of manoeuvre in terms of corporate strategy, corporate elites may not have the possibility of enacting radical changes that would depart from weak ecological modernization practice.

Second, this study addressed the question whether climate capitalism, as a project, stands a chance of gathering sufficient support among the organized segment of the corporate elite and other actors of global politics, to become hegemonic. The analysis showed mixed results on this point. On the one hand, the analysis of corporate interlocks did find a social architecture which could provide a basis for the climate capitalist project to mobilize the corporate community into a broad coalition in support of a regime transition. It showed that the climate capitalist corporate network extends to many sectors, including the crucial sectors of energy and finance, as well as to a number of G500 corporations. It also found a climate capitalist inner circle of corporate directors that has considerable reach into the network of board interlocks linking G500 corporations together. Similarly, the analysis of the network of collaborations between CEPGs on the one hand, and IGOs and other organizations of the global political field on the other hand, showed that an extensive group of core hegemonic IGOs, as well as philanthropic foundations and environmental NGOs, maintains links to climate capitalism. These relations have two implications. First, they indicate penetration of climate capitalism among IGOs, foundations and NGOs, and thus a certain level of support for the project by these organizations. Especially crucial are the linkages with such hegemonic IGOs as the World Bank Group agencies, which have been deeply involved in building the neoliberal regime. Second, they suggest the potential for a flow of resources from these organizations toward climate capitalism as a project. Importantly, such resources include funding, particularly from international financial institutions and philanthropic foundations. Such support may strengthen climate capitalism's position in global climate politics and beyond. In short, social relations of multiple types do exist around climate capitalism, providing the project with an architecture through which it might eventually expand and become hegemonic.

However, in the previous chapters I have also noted that this architecture has a relatively limited reach and the relations supporting it are rather thin. Geographically, both the corporate network and the collaboration network that CEPGs established around them are strongly concentrated in the North Atlantic. This lack of substantial relations with other regions and countries, especially with Japan, which has long been a major centre of accumulation and GHG emissions, and China – now the largest GHG emitting country – indicates that climate capitalism only spans some of the core capitalist countries. The other limitation of the climate capitalist architecture is social. The core of social ties that link corporations and CEPGs together rests on a very small number of individuals. If for some reason these individuals left these relations and no one else moved in to replace them, the network would lose a large part of its coherence as well as much of its reach within the G500.

In sum, this study answers the question of the potential of the climate capitalist project to mobilize a hegemonic bloc with a qualified yes: although such a bloc had not fully formed in 2010, at the moment of data collection, it seems poised to emerge in the future as the global ecological crisis deepens – perhaps as an outcome of the 2015 Paris Climate Conference. As to the question of the content of climate capitalism, and thereupon the issue of whether climate capitalism can actually provide a reduction in GHG emissions, the study finds that the dominant view of climate capitalism is that of a weak ecological modernization, taking place over the long term. In view of the scientific consensus on the urgency of massive GHG emissions reductions in the near term, this confirms the argument put forth by critics that a realistic response to climate change cannot be founded on climate capitalist principles⁶³.

The third question posed in Chapter 1 was that of a major ethical dilemma. On the one hand, one could argue pragmatically for supporting climate capitalism as the only proposal currently on the table advocating certain economic changes to address climate change. On the other hand, one could oppose climate capitalism on the grounds of the injustice it brings forth and the deception in pretending that it can actually address the

⁶³ Which, in Derber's (2010) terms, amount to another expression of climate change denial – “stage two” of the denial regime as he phrases it.

crisis. The evidence summarized here from the previous chapters suggests that climate capitalism should be opposed, as the likelihood of it actually addressing climate change in a timely manner is minimal. This holds if climate capitalism's focus remains on developing carbon markets and implementing a carbon tax, two policy tools that rest on a long time frame and thus do not allow to avoid disruptive warming of the atmosphere. However, recent developments in scientific and political discussions suggest that a new tool might soon be part of the climate capitalist toolbox. Indeed, climate engineering technologies, and especially solar radiation management by means of spreading microparticles in the high atmosphere to reflect the sun's heat, are getting much closer to representing viable possibilities for keeping global warming under the most dangerous thresholds (Bellamy et al. 2012; Cusack et al. 2014), undeterred by enormous popular opposition (Corner et al. 2012; ETC Group 2010; Hamilton 2013). Despite concerns around the governance of research about, and application of, such schemes (Parson 2014; Parson and Ernst 2013), not to mention the risks associated with their deployment (Robock 2008, 2012), it appears that climate engineering might provide a way to rally at least part of the hard-right opposition to a modified climate capitalism that incorporates such technologies as a short-term technological fix (e.g. Lane and Bickel 2013; Lomborg 2010).

As part of the climate capitalist package, it is argued that solar radiation management could allow for avoidance of major climate disruption while other market mechanisms are scaled up to become capable of reducing GHG emissions on the required scale (Parson 2014). With the addition of solar radiation management, it might be the case that despite the failure of carbon markets to meaningfully reduce GHG emissions, climate capitalism, expanded to take in climate engineering, could (a) rally part of the opposition to climate change action; (b) reduce the immediate threat of global warming; and hence (c) address climate change all the while preserving the bases of capitalist accumulation. Of course, such a course of action implies displacing once more the crisis in time and space (see Harvey 2011), given that potential side effects of solar radiation management are not well understood (ETC Group 2010; Hamilton 2013; Robock 2012). In the end, the ethical question remains: is it preferable to support climate capitalism as a last resort

in face of the consequences of global warming, or is it preferable to refuse the ongoing displacement of the burden of addressing climate change onto those who have not caused it in the first place? The empirical work presented in this dissertation cannot provide a definitive answer to this question.

As a final set of thoughts, many scholars focus on neoliberalism as the root of destruction of nature. I must make it clear that my focus here went beyond neoliberalism. Climate change poses the broader problem of the relationship between humans and nature, that of how humans live on and off of the territory, and its normative cognate: how should humans live on the territory? The problem posed by climate change points at the fossil fuel dependent character of industrial capitalism, of which neoliberalism is but one particular, recent instance (see e.g. Arrighi 2010; Harvey 2005), as the foundation of the increasingly problematic relationship present day humans have with their territory. But, considering the problem in both its economic and political dimensions also draws attention to an even broader dynamic, that between centralized institutions of power and humans living on the territory (M'Gonigle 2000). Through industrial capitalist production, the centre appropriates a disproportionate amount of the resources of the territory, be they human or natural. Thus, climate change and other instances of environmental destruction have their root not only in the economic relations particular to industrial capitalism, but also in the political relations that constitute it and that have been the object of this study. This dissertation was an attempt to shed light on the nature of the undemocratic political relations underpinning the destructive economic relations that are the mainstay of the fossil fuelled capitalist mode of production. The successful resolution of the unfolding climate and ecological crisis will depend on the capacity of engaged individuals to transform this mode of production, in both its economic and political dimensions.

References cited

- Abraham, Yves-Marie, Louis Marion, and Hervé Philippe, eds. 2011. *Développement durable versus décroissance. Débats pour la suite du monde*. Montréal: Écosociété.
- Agarwal, Anil and Sunita Narain. 1991. *Global Warming in an Unequal World: A Case of Environmental Colonialism*. New Delhi: Centre for Science and Environment.
- Van Alstine, James, Stavros Afionis, and Peter Doran. 2013. "The UN Conference on Sustainable Development (Rio+20): A Sign of the Times or 'Ecology as Spectacle'?" *Environmental Politics* 22(2):333–38.
- Altwater, Elmar. 2007. "The Social and Natural Environment of Fossil Capitalism." *Socialist Register* 43.
- Altwater, Elmar. 2011. "The 'Tragedy of the Atmosphere' or the Doubling of the Carbon Cycle and the Circulation of Capital." Pp. 125–43 in *After Cancún*, edited by Elmar Altwater and Achim Brunnengräber. VS Verlag für Sozialwissenschaften.
- Anderson, Blake and Michael M'Gonigle. 2012. "Does Ecological Economics Have a Future? Contradiction and Reinvention in the Age of Climate Change." *Ecological Economics* 84:37–48.
- Angus, Ian. 2008. *Confronting the Climate Change Crisis: An Ecosocialist Perspective*. South Branch Publications.
- Antonio, Robert J. and Robert J. Brulle. 2011. "The Unbearable Lightness of Politics: Climate Change Denial and Political Polarization." *Sociological Quarterly* 52(2):195–202.
- Van Apeldoorn, Bastiaan. 2000. "Transnational Class Agency and European Governance: The Case of the European Round Table of Industrialists." *New Political Economy* 5(2):157–81.
- Van Apeldoorn, Bastiaan. 2002. *Transnational Capitalism and the Struggle Over European Integration*. London: Routledge.
- Van Apeldoorn, Bastiaan and Naná de Graaff. 2012. "The Limits of Open Door Imperialism and the US State–capital Nexus." *Globalizations* 9(4):593–608.
- Van Apeldoorn, Bastiaan, Naná de Graaff, and Henk Overbeek. 2012. "The Reconfiguration of the Global State–capital Nexus." *Globalizations* 9(4):471–86.
- Arnot, Madeleine. 1989. "Consultation or Legitimation? Race and Gender Politics and the Making of the National Curriculum." *Critical Social Policy* 9(27):20–38.

- Arnove, Robert F., ed. 1980. *Philanthropy and Cultural Imperialism: The Foundations at Home and Abroad*. Boston: G. K. Hall.
- Arrighi, Giovanni. 2010. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. 2nd ed. London and New York: Verso.
- Ashton, James. 2013. "A Boss with More on His Plate than Sales Figures." *The Independent*, June 8, 50–51.
- AtKisson, Alan. 2009. *A Global Green New Deal for Climate, Energy, and Development*. New York: United Nations Department of Economic and Social Affairs.
- Bakan, Joel. 2004. *The Corporation: The Pathological Pursuit of Profit and Power*. Toronto: Viking Canada.
- Bakker, Peter. 2013. "Can Sustainable Business Operate on Internet Time?" *COP19 - Climate Change: The New Economy*, December, 128–29.
- Baran, Paul A. and Paul M. Sweezy. 1966. *Monopoly Capital: An Essay on the American Social and Economic Order*. New York: Monthly Review Press.
- Barbier, Edward B. 2009. *Rethinking the Economic Recovery: A Global Green New Deal*. United Nations Environment Programme.
- Barbier, Edward B. 2010a. *A Global Green New Deal Rethinking the Economic Recovery*. Cambridge: Cambridge University Press.
- Barbier, Edward B. 2010b. "Global Governance: The G20 and a Global Green New Deal." *Economics: The Open-Access, Open-Assessment E-Journal* 4(2).
- Barbier, Edward B. 2012. "The Green Economy Post Rio+20." *Science* 338(6109):887–88.
- Barker, Terry, Mark Kenber, Serban Scricciu, and Damian Ryan. 2009. *Breaking the Climate Deadlock – Cutting the Cost: Key Elements for a Copenhagen Climate Agreement*. London: The Climate Group and The Office of Tony Blair.
- Barthes, Roland. 1972. *Mythologies*. London: Paladin Books.
- Bayart, Bertille. 2012. "La voiture 'verte', cela prépare l'année... 2020 !." *Le Figaro*, July 25.
- BCSE. 2013. *Clean Energy Partners: Solutions for Energy Security and Economic Growth*. Washington, D.C.: Business Council for Sustainable Energy.
- Beckfield, Jason. 2003. "Inequality in the World Polity: The Structure of International Organization." *American Sociological Review* 68(3):401–24.

- Beckfield, Jason. 2008. "The Dual World Polity: Fragmentation and Integration in the Network of Intergovernmental Organizations." *Social Problems* 55(3):419–42.
- Beckfield, Jason. 2010. "The Social Structure of the World Polity." *American Journal of Sociology* 115(4):1018–68.
- Bellamy, Rob, Jason Chilvers, Naomi E. Vaughan, and Timothy M. Lenton. 2012. "A Review of Climate Geoengineering Appraisals." *Wiley Interdisciplinary Reviews: Climate Change* 3(6):597–615.
- Benton, Ted. 2000. "An Ecological Historical Materialism." Pp. 83–104 in *Nature, Production, Power: Towards an Ecological Political Economy*, edited by Fred P. Gale and Michael M'Gonigle. Cheltenham (UK) and Northampton (MA): Edward Elgar.
- Bergmann, Luke. 2013. "Bound by chains of carbon: ecological–economic geographies of globalization." *Annals of the Association of American Geographers* 103(6):1348–70.
- Bernstein, Steven. 2000. "Ideas, Social Structure and the Compromise of Liberal Environmentalism." *European Journal of International Relations* 6(4):464–512.
- Bernstein, Steven. 2002. *The Compromise of Liberal Environmentalism*. New York: Columbia University Press.
- Bernstein, Steven, Michele Betsill, Matthew Hoffmann, and Matthew Paterson. 2010. "A Tale of Two Copenhagen: Carbon Markets and Climate Governance." *Millennium: Journal of International Studies* 39(1):161–73.
- Betsill, Michele and Matthew J. Hoffmann. 2011. "The Contours of 'cap and Trade': The Evolution of Emissions Trading Systems for Greenhouse Gases." *Review of Policy Research* 28(1):83–106.
- Bhaskar, Roy. 1998. "Societies." in *Critical Realism: Essential Readings, Critical Realism: Interventions*, edited by Margaret Archer, Roy Bhaskar, Andrew Collier, Tony Larson, and Alan Norrie. London and New York: Routledge.
- Bina, Olivia and Francesco La Camera. 2011. "Promise and Shortcomings of a Green Turn in Recent Policy Responses to the 'double Crisis.'" *Ecological Economics* 70(12):2308–16.
- Bitter, Martin. 2011. "Contradictions of the Commodity Carbon – On the Material and Symbolic Production of a Market." Pp. 71–93 in *After Cancún*, edited by Elmar Altvater and Achim Brunnengräber. VS Verlag für Sozialwissenschaften.
- Blau, Peter M. 1977. *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York: Free Press.

- Böhm, Steffen and Siddhartha Dabhi. 2009a. "Upsetting the Offset: An Introduction." Pp. 9–24 in *Upsetting the offset: the political economy of carbon markets*. London: MayFlyBooks.
- Böhm, Steffen and Siddhartha Dabhi, eds. 2009b. *Upsetting the Offset: The Political Economy of Carbon Markets*. London: MayFlyBooks.
- Böhm, Steffen, Maris Ceci Misoczky, and Sandra Moog. 2012. "Greening Capitalism? A Marxist Critique of Carbon Markets." *Organization Studies* 33(11):1617–38.
- Böhm, Steffen, Anna-Maria Murtola, and Sverre Spoelstra. 2012. "The Atmosphere Business." *Ephemera: Theory & Politics in Organization* 21(1):1–11.
- Boli, John and George M. Thomas. 1997. "World Culture in the World Polity: A Century of International Non-Governmental Organization." *American Sociological Review* 62(2):171–90.
- Bollier, David and Soilke Helfrich, eds. 2012. *The Wealth of Commons: A World Beyond Market and State*. Levellers Press.
- Bonacich, Phillip. 1972. "Factoring and Weighting Approaches to Status Scores and Clique Identification." *Journal of Mathematical Sociology* 2(1):113–20.
- Bonacich, Phillip. 1987. "Power and Centrality: A Family of Measures." *American Journal of Sociology* 92(5):1170–82.
- Bond, Patrick. 2012. "Emissions Trading, New Enclosures and Eco-Social Contestation." *Antipode* 44(3):684–701.
- Bond, Patrick. 2013. "Climate Crisis, Carbon Market Failure, and Market Booster Failure: A Reply to Robin Hahnel's 'Desperately Seeking Left Unity on International Climate Policy.'" *Capitalism Nature Socialism* 24(1):54–61.
- Bond, Patrick, Khadija Sharife, Ruth Castel-Branco, Fidelis Allen, Baruti Amisi, Keith Brunner, et al. 2012. *The CDM Cannot Deliver the Money to Africa: Why the Carbon Trading Gamble Won't Save the Planet from Climate Change, and How African Civil Society Is Resisting*. EJOLT.
- Bonds, Eric and Liam Downey. 2012. "Green Technologies and Unequal Ecological Exchange: The Environmental and Social Consequences of Ecological Modernization in the World System." *Journal of World-Systems Research* 18:1–22.
- Bookchin, Murray. 1971. *Post-Scarcity Anarchism*. Berkeley: Ramparts Press.
- Borgatti, Stephen P., Martin G. Everett, and Jeffrey C. Johnson. 2013. *Analysing Social Networks*. London: SAGE Publications.

- Borgatti, Steve P. 2002. *NetDraw: Software for Network Visualization*. Lexington (KY): Analytic Technologies.
- Borgatti, Steve P., Martin G. Everett, and Linton C. Freeman. 2002. *Ucinet for Windows: Software for Social Network Analysis*. Harvard (MA): Analytic Technologies.
- Bourdieu, Pierre. 1991. *Language and Symbolic Power*. Cambridge, Mass: Harvard University Press.
- Bourdieu, Pierre. 2001. *Langage et pouvoir symbolique*. Paris: Éditions du Seuil.
- Bourdieu, Pierre. 2011. "Champ du pouvoir et division du travail de domination." *Actes de la recherche en sciences sociales* 190(5):126–39.
- Bourdieu, Pierre and Monique de Saint Martin. 1978. "Le patronat." *Actes de la recherche en sciences sociales* 20-21:3–82.
- Brand, Ulrich. 2012. "Green Economy the next Oxymoron? No Lessons Learned from Failures of Implementing Sustainable Development." *GAIA - Ecological Perspectives for Science and Society* 21(1):28–32.
- Braun, Marcel. 2009. "The Evolution of Emissions Trading in the European Union – The Role of Policy Networks, Knowledge and Policy Entrepreneurs." *Accounting, Organizations and Society* 34(3–4):469–87.
- Breiger, Ronald L. 1974. "The Duality of Persons and Groups." *Social Forces* 53(2):181–90.
- Brem-Wilson, Josh. 2012. "La Via Campesina and the UN Committee on World Food Security: A Transnational Public Sphere?." Ph.D. dissertation, Bradford (UK): University of Bradford.
- Brenner, Neil. 1998. "Global Cities, Glocal States: Global City Formation and State Territorial Restructuring in Contemporary Europe." *Review of International Political Economy* 5(1):1–37.
- Brødsgaard, Kjeld Erik. 2012. "Politics and Business Group Formation in China: The Party in Control?" *The China Quarterly* 211:624–48.
- Brownlee, Jamie. 2005. *Ruling Canada: Corporate Cohesion and Democracy*. Halifax: Fernwood Publishing.
- Brown, Lester R. 2000. *The Rise and Fall of the Global Climate Coalition*. Earth Policy Institute.

- Brulle, Robert J. 2013. "Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations." *Climatic Change* 122(4):681–94.
- Brunnengräber, Achim. 2009. "The Political Economy of the Kyoto Protocol." *Socialist Register* 43.
- Bullard, Nicola and Tadzio Mueller. 2012. "Beyond the 'green Economy': System Change, Not Climate Change?." *Development* 55(1):54–62.
- Bumpus, Adam G. and Diana M. Liverman. 2008. "Accumulation by Decarbonization and the Governance of Carbon Offsets." *Economic Geography* 84(2):127–55.
- Burris, Val. 1991. "Director Interlocks and the Political Behavior of Corporations and Corporate Elites." *Social Science Quarterly* 72(3):537.
- Burris, Val. 2001. "The Two Faces of Capital: Corporations and Individual Capitalists as Political Actors." *American Sociological Review* 66(3):361–81.
- Burris, Val. 2005. "Interlocking Directorates and Political Cohesion Among Corporate Elites." *American Journal of Sociology* 111(1):249–83.
- Burris, Val. 2008. "The Interlock Structure of the Policy-Planning Network and the Right Turn in U.S. State Policy." *Research in Political Sociology* 17:3–42.
- Burt, Ronald S. 1976. "Positions in Networks." *Social Forces* 55(1):93–122.
- Büscher, Bram, Wolfram Dressler, and Robert Fletcher, eds. 2014. *NatureTM Inc: Environmental Conservation in the Neoliberal Age*. Tucson: University of Arizona Press.
- Candeias, Mario. 2013. *Green Transformation: Competing Strategic Projects*. Berlin: Rosa Luxemburg Foundation.
- Carrere, Ricardo. 2009. "Carbon Sink Plantation in Uganda: Evicting People for Making Space for Trees." Pp. 98–101 in *Upsetting the offset: the political economy of carbon markets*. London: MayFlyBooks.
- Carroll, Rory. 2014. "California Carbon Stuck near Floor Price amid Oversupply Fears." *Market News*. Retrieved April 4, 2014 (http://www.ubs.wallst.com/ubs/mkt_story.asp?docKey=1329-L1N0MV2EC-1&first=0).
- Carroll, William K. 1984. "The Individual, Class, and Corporate Power in Canada." *Canadian Journal of Sociology* 9(3):245–68.

- Carroll, William K. 1986. *Corporate Power and Canadian Capitalism*. Vancouver: University of British Columbia Press.
- Carroll, William K. 1990. "Restructuring Capital, Reorganizing Consent: Gramsci, Political Economy and Canada." *Canadian Review of Sociology and Anthropology* 27(3):390–416.
- Carroll, William K. 2004. *Corporate Power in a Globalizing World: A Study in Elite Social Organization*. Don Mills (ON): Oxford University Press.
- Carroll, William K. 2007a. "Global Cities in the Global Corporate Network." *Environment and Planning A* 39(10):2297–2323.
- Carroll, William K. 2007b. "Hegemony and Counter-Hegemony in a Global Field." *Studies in Social Justice* 1(1):36–66.
- Carroll, William K. 2010. *The Making of a Transnational Capitalist Class: Corporate Power in the 21st Century*. London and New York: Zed Books.
- Carroll, William K. 2013. "Whither the Transnational Capitalist Class?" *Socialist Register* 50:162–88.
- Carroll, William K. and James Beaton. 2000. "Globalization, Neo-Liberalism and the Changing Face of Corporate Hegemony in Higher Education." *Studies in Political Economy* 62:71–98.
- Carroll, William K. and Colin Carson. 2003. "Forging a New Hegemony? The Role of Transnational Policy Groups in the Network and Discourse of Global Corporate Governance." *Journal of World-Systems Research* 9(1):67–102.
- Carroll, William K., Meindert Fennema, and Eelke M. Heemskerk. 2010. "Constituting Corporate Europe: A Study of Elite Social Organization." *Antipode* 42(4):811–43.
- Carroll, William K. and Jean Philippe Sapinski. 2010. "The Global Corporate Elite and the Transnational Policy-Planning Network, 1996-2006: A Structural Analysis." *International Sociology* 25(4):501–38.
- Carroll, William K. and Jean Philippe Sapinski. 2011. "Corporate Elites and Intercorporate Networks." Pp. 180–95 in *The SAGE Handbook of Social Network Analysis*, edited by Peter J. Carrington and John Scott. London: SAGE Publications.
- Carroll, William K. and Jean Philippe Sapinski. 2013. "Embedding Post-Capitalist Alternatives? The Global Network of Alternative Knowledge Production and Mobilization." *Journal of World-Systems Research* 19(2):211–40.

- Carroll, William K. and Jean Philippe Sapinski. 2014. "Transnational Alternative Policy Groups in Global Civil Society: Enablers of Post-Capitalist Alternatives or Carriers of NGOization?" *Critical Sociology* Under review.
- Carroll, William K. and Murray Shaw. 2001. "Consolidating a Neoliberal Policy Bloc in Canada, 1976 to 1996." *Canadian Public Policy* 27(2):195–217.
- Carruth, Allison. 2014. "The Digital Cloud and the Micropolitics of Energy." *Public Culture* 26(2):339–64.
- Carruthers, David. 2001. "From Opposition to Orthodoxy: The Remaking of Sustainable Development." *Journal of Third World Studies* 18(2):93–112.
- Castree, Noel. 2003. "Commodifying What Nature?" *Progress in Human Geography* 27(3):273–97.
- Catton, William R. and Riley E. Dunlap. 1980. "A New Ecological Paradigm for Post-Exuberant Sociology." *American Behavioral Scientist* 24:15–47.
- Catton, William R., Jr. and Riley E. Dunlap. 1978. "Environmental Sociology: A New Paradigm." *The American Sociologist* 13(1):41–49.
- Centre for Energy-Efficient Telecommunications. 2013. *The Power of Wireless Cloud: An Analysis of the Energy Consumption of Wireless Cloud*. Melbourne: Bell Labs and University of Melbourne.
- Chatterjee, Pratap and Matthias Finger. 1994. *The Earth Brokers: Power, Politics, and World Development*. London: Routledge.
- Chen, Gang. 2012. *China's Climate Policy*. Hoboken: Routledge.
- Choudry, Aziz and Dip Kapoor, eds. 2010. *Learning from the Ground up: Global Perspectives on Social Movements and Knowledge Production*. New York: Palgrave Macmillan.
- Choudry, Aziz and Dip Kapoor, eds. 2013. *NGOization: Complicity, Contradictions and Prospects*. London: Zed Books.
- Clark, Andrew. 2014. "Unilever Boss Urges His Peers to Go Green." *The Times*, April 7, 38.
- Clark, Brett and Richard York. 2005. "Carbon Metabolism: Global Capitalism, Climate Change, and the Biospheric Rift." *Theory and Society* 34(4):391–428.
- Commoner, Barry. 1974. *The Closing Circle: Nature, Man & Technology*. New York: Alfred A. Knopf, Inc.

- Confino, Jo. 2014. "CEO of Unilever and Sustainable Business Leader of the Year, Believes the Key to Successful Leadership Lies in Being Human." *The Guardian*, May 27.
- Copenhagen Climate Council. 2007. *Manifesto*. Copenhagen: Copenhagen Climate Council.
- Copenhagen Climate Council and PricewaterhouseCoopers LLP. 2009. *Summary Report for Policymakers. World Business Summit on Climate Change Shaping the Sustainable Economy Copenhagen, 24-26 May 2009*. Copenhagen: Copenhagen Climate Council.
- Corner, Adam, Nick Pidgeon, and Karen Parkhill. 2012. "Perceptions of Geoengineering: Public Attitudes, Stakeholder Perspectives, and the Challenge of 'Upstream' Engagement." *Wiley Interdisciplinary Reviews: Climate Change* 3(5):451–66.
- Corporate Europe Observatory. 2000. *Greenhouse Market Mania: UN Climate Talks Corrupted by Corporate Pseudo-Solutions*. Amsterdam: Corporate Europe Observatory.
- Cosnard, Denis, Pierre Le Hir, and Cédric Pietralunga. 2013. "La part du nucléaire devrait baisser mécaniquement." *Le Monde*, July 30.
- Cox, Ronald W. 2013. "Transnational Capital and the Politics of Global Supply Chains." *Class, Race and Corporate Power* 1(1):Article 4.
- Crépeau, Robert. 2001. "Une écologie de la connaissance est-elle possible?" in *Émile Durkheim: Critical Assessments of Leading Sociologists*. London and New York: Routledge and The British Center for Durkheimian Studies.
- Crooks, Ed. 2007. "Disciplined Finn Finding His Voice." *Financial Times*, April 25, 21.
- Cusack, Daniela F., Jonn Aksen, Rachael Shwom, Lauren Hartzell-Nichols, Sam White, and Katherine RM Mackey. 2014. "An Interdisciplinary Assessment of Climate Engineering Strategies." *Frontiers in Ecology and the Environment* 12(5):280–87.
- Custers, Peter. 2010. "The Tasks of Keynesianism Today: Green New Deals As Transition Towards a Zero Growth Economy?" *New Political Science* 32(2):173–91.
- Czech, Brian. 2008. "Prospects for Reconciling the Conflict between Economic Growth and Biodiversity Conservation with Technological Progress." *Conservation Biology* 22(6):1389–98.
- Czech, Brian and Herman E. Daly. 2004. "The Steady State Economy—what It Is, Entails, and Connotes." *Wildlife Society Bulletin* 32(2):598–605.

- Dahl, Robert. 1961. *Who Governs? Democracy and Power in an American City*. New Haven (CT): Yale University Press.
- D'Alisa, Giacomo, Federico Demaria, and Claudio Cattaneo. 2013. "Civil and Uncivil Actors for a Degrowth Society." *Journal of Civil Society* 9(2):212–24.
- Daly, Herman E. 1973. *Toward a Steady-State Economy*. San Francisco: W. H. Freeman.
- Daly, Herman E. 1996. *Beyond Growth: The Economics of Sustainable Development*. Boston: Beacon Press.
- Daly, Herman E. 1999. "Uneconomic Growth in Theory and in Fact." in *The First Annual Feasta Lecture*. Trinity College, Dublin: Feasta Review.
- Davidson, Debra J. and Michael Gismondi. 2011. *Challenging Legitimacy at the Precipice of Energy Calamity*. New York: Springer.
- Degenne, Alain and Michel Forsé. 2004. *Les réseaux sociaux*. Paris: Armand Colin.
- Dempsey, Jessica. 2011. "Making Markets, Making Biodiversity: Understanding Global Biodiversity Politics." Ph.D. dissertation, Vancouver: University of British Columbia.
- Dempsey, Jessica. 2013. "Biodiversity Loss as Material Risk: Tracking the Changing Meanings and Materialities of Biodiversity Conservation." *Geoforum* 45:41–51.
- Depledge, Joanna. 2008. "Striving for No: Saudi Arabia in the Climate Change Regime." *Global Environmental Politics* 8(4):9–35.
- Derber, Charles. 2010. *Greed to Green: Solving Climate Change and Remaking the Economy*. Boulder (CO) and London: Paradigm Publishers.
- Descheneau, Philippe and Matthew Paterson. 2011. "Between Desire and Routine: Assembling Environment and Finance in Carbon Markets." *Antipode* 43(3):662–81.
- Domhoff, G. William. 2009. "The Power Elite and Their Challengers: The Role of Nonprofits in American Social Conflict." *American Behavioral Scientist* 52(7):955–73.
- Domhoff, G. William. 2014. *Who Rules America? The Triumph of the Corporate Rich*. 7th ed. New York: McGraw-Hill.
- Downie, Christian. 2014. "Transnational Actors in Environmental Politics: Strategies and Influence in Long Negotiations." *Environmental Politics* 23(3):376–94.
- Downing, Louise. 2014. "BP Ends Renewables Energy Target after \$8.3 Billion Spend." *Bloomberg*, March 19.

- Dryzek, John S. 2013. *The Politics of the Earth: Environmental Discourses*. Oxford University Press.
- Dudouet, François-Xavier and Eric Grémont. 2007. "Les grands patrons et l'État en France." *Sociétés contemporaines* 68(4):105–31.
- Dudouet, François-Xavier, Éric Grémont, Hervé Joly, and Antoine Vion. 2014. "Retour sur le champ du pouvoir économique en France." *Revue Française de Socio-Économie* 13(1):23–48.
- Dunlap, Riley E. 2013. "Climate Change Skepticism and Denial: An Introduction." *American Behavioral Scientist* 57(6):691–98.
- Dunlap, Riley E. and William R. Catton. 1994. "Struggling with Human Exemptionalism: The Rise, Decline and Revitalization of Environmental Sociology." *The American Sociologist* 25(1):5–30.
- Dunlap, Riley E. and Peter J. Jacques. 2013. "Climate Change Denial Books and Conservative Think Tanks: Exploring the Connection." *American Behavioral Scientist* 57(6):699–731.
- Eades, Peter D. 1984. "A Heuristics for Graph Drawing." *Congressus Numerantium* 42:146–60.
- EDF. 2010. *Rapport de développement durable 2010*. Paris: EDF.
- Elgin, Ben. 2014. "Chevron Backpedals Again on Renewable Energy." *BusinessWeek*, June 9.
- ETC Group. 2010. *Geopiracy: The Case Against Geoengineering*. Ottawa: ETC Group.
- Falkner, Robert. 2008. *Business Power and Conflict in International Environmental Politics*. London: Palgrave Macmillan.
- Falkowski, P., R. J. Scholes, E. Boyle, J. Canadell, D. Canfield, J. Elser, et al. 2000. "The Global Carbon Cycle: A Test of Our Knowledge of Earth as a System." *Science* 290(5490):291–96.
- Fennema, Meindert and Huibert Schijf. 1978. "Analysing Interlocking Directorates: Theory and Methods." *Social Networks* 1(4):297–332.
- Fisher, Dana R. and William R. Freudenburg. 2001. "Ecological Modernization and Its Critics: Assessing the Past and Looking toward the Future." *Society and Natural Resources* 14(8):701–9.
- Fisher, Dana R., Philip Leifeld, and Yoko Iwaki. 2012. "Mapping the Ideological Networks of American Climate Politics." *Climatic Change* 116(3-4):523–45.

- Flood, Christopher. 2002. *Political Myth: A Theoretical Introduction*. London: Routledge.
- Foster, John Bellamy. 1999. "Marx's Theory of Metabolic Rift: Classical Foundation for Environmental Sociology." *American Journal of Sociology* 105(2):366–405.
- Foster, John Bellamy. 2000. *Marx's Ecology: Materialism and Nature*. New York: Monthly Review Press.
- Foster, John Bellamy. 2011. "Capitalism and Degrowth: An Impossibility Theorem." *Monthly Review* 62(8).
- Foster, John Bellamy. 2012. "The Planetary Rift and the New Human Exemptionalism A Political-Economic Critique of Ecological Modernization Theory." *Organization & Environment* 25(3):211–37.
- Foster, John Bellamy and Brett Clark. 2009. "The Paradox of Wealth: Capitalism and Ecological Destruction." *Monthly Review* 61(6):1–14.
- Foster, John Bellamy, Brett Clark, and Richard York. 2009. "The Midas Effect: A Critique of Climate Change Economics." *Development and Change* 40(6):1085–97.
- Freeman, Linton C. 1977. "A Set of Measures of Centrality Based on Betweenness." *Sociometry* 40(1):35–41.
- Freeman, Linton C. 1979. "Centrality in Social Networks: Conceptual Clarification." *Social Networks* 1:215–39.
- Freeman, Linton C. 2000. "Visualizing Social Networks." *Journal of Social Structure* 1(1).
- Friedman, Thomas. 2007. "The Power of Green." *The New York Times*, April 15, 40.
- Gates, Bill and Charles O. Jr. Holliday. 2010. "Why We Need a Bigger Commitment to Energy Innovation." *St. Paul Pioneer Press*, April 24.
- Gawel, Erik, Sebastian Strunz, and Paul Lehmann. 2013. "Germany's Energy Transition under Attack: Is There an Inscrutable German Sonderweg?" *Nature and Culture* 8(2):121–33.
- Geall, Sam, ed. 2013. *China and the Environment: The Green Revolution*. London and New York: Zed Books.
- Gendron, Corinne. 2006. *Le développement durable comme compromis. La modernisation écologique de l'économie à l'ère de la mondialisation*. Ste-Foy: Presses de l'Université du Québec.

- Georgescu-Roegen, Nicholas. 1971. *The Entropy Law and the Economic Process*. Cambridge (MA): Harvard University Press.
- Giddens, Anthony. 2009. *Politics of Climate Change*. Polity Press.
- Gilbertson, Tamara and Oscar Reyes. 2009. *Carbon Trading: How It Works and Why It Fails*. Uppsala: Dag Hammarskjöld Foundation.
- Gill, Stephen. 1990. *American Hegemony and the Trilateral Commission*. Cambridge (UK): Cambridge University Press.
- Gill, Stephen. 1995. "Theorizing the Interregnum: The Double Movement of Global Politics in the 1990s." Pp. 65–99 in *International Political Economy: Understanding Global Disorder*, edited by Bjorn Hettne. Halifax: Fernwood Books.
- Girardet, Raoul. 1988. *Mythes et mythologies politiques*. Le Seuil. Paris.
- Girvan, Anita. 2014. "Tracing Carbon Footprints: Affective Mediations of Metaphor in the Cultural Politics of Climate Change." Unpublished Ph. D. dissertation, University of Victoria.
- Gleckman, Harris. 1995. "Transnational Corporations' Strategic Responses to 'Sustainable Development.'" Pp. 93–106 in *Green Globe Yearbook of International Co-operation on Environment and Development 1995*, edited by Helge Ole Berendsen, Georg Parmann, and Øystein B. Thommessen. Oxford: Oxford University Press.
- Goodman, James. 2009. "From Global Justice to Climate Justice? Justice Ecology in an Era of Global Warming." *New Political Science* 31(4):499–514.
- Goodman, James and Ariel Salleh. 2013. "The 'green Economy': Class Hegemony and Counter-Hegemony." *Globalizations* 10(3):411–24.
- Gould, Kenneth A., David N. Pellow, and Allan Schnaiberg. 2004. "Interrogating the Treadmill of Production: Everything You Wanted to Know About the Treadmill but Were Afraid to Ask." *Organization & Environment* 17(3):296–316.
- Gould, Roger V. and Roberto M. Fernandez. 1989. "Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks." *Sociological Methodology* 19:89–126.
- Gramsci, Antonio. 1971. *Selections from the Prison Notebooks*. London: Lawrence and Wishart.

- Van Griethuysen, Pascal. 2010. "Why Are We Growth-Addicted? The Hard Way towards Degrowth in the Involutionary Western Development Path." *Journal of Cleaner Production* 18(6):590–95.
- Grubb, Michael. 2012. "Emissions Trading: Cap and Trade Finds New Energy." *Nature* 491(7426):666–67.
- Grubb, Michael and Karsten Neuhoff. 2006. "The EU Emissions Trading System: Getting It Right." *Renewable Energy for Development*, December, 1–3.
- Guilhot, Nicolas. 2007. "Reforming the World: George Soros, Global Capitalism and the Philanthropic Management of the Social Sciences." *Critical Sociology* 33(3):447–77.
- Hahnel, Robin. 2012a. "Desperately Seeking Left Unity on International Climate Policy." *Capitalism Nature Socialism* 23(4):83–99.
- Hahnel, Robin. 2012b. "Left Clouds Over Climate Change Policy." *Review of Radical Political Economics* 44(2):141–59.
- Hajer, Maarten A. 1995. *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Oxford: Clarendon Press.
- Hall, Charles A. S. and Kent A. Klitgaard. 2012. *Energy and the Wealth of Nations: Understanding the Biophysical Economy*. Springer.
- Hall, Charles A. S., Jessica G. Lambert, and Stephen B. Balogh. 2014. "EROI of Different Fuels and the Implications for Society." *Energy Policy* 64:141–52.
- Hall, Charles A. S. and Carlos A. Ramírez-Pascualli. 2013. *The First Half of the Age of Oil: An Exploration of the Work of Colin Campbell and Jean Laherrère*. Springer.
- Haluza-DeLay, Randolph. 2012. "Giving Consent in the Petrostate: Hegemony and Alberta Oil Sands." *Journal for Activism in Science & Technology Education* 4(1).
- Hamilton, Clive. 2013. *Earthmasters: The Dawn of the Age of Climate Engineering*. New Haven (CT): Yale University Press.
- Hanneman, Robert A. and Mark Riddle. 2011. "Concepts and Measures for Basic Network Analysis." Pp. 340–69 in *The SAGE Handbook of Social Network Analysis*, edited by John Scott and Peter J. Carrington. London: SAGE Publications.
- Harris, Jerry. 2012. "Outward Bound: Transnational Capitalism in China." Pp. 220–41 in *Financial Elites And Transnational Business: Who Rules the World?*, edited by

Georgina Murray and John Scott. Cheltenham (UK) and Northampton (MA): Edward Elgar Publishing.

Harvey, David. 1999. *The Limits to Capital*. London: Verso.

Harvey, David. 2005. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.

Harvey, David. 2011. "Crises, Geographic Disruptions and the Uneven Development of Political Responses." *Economic Geography* 87(1):1–22.

Harvey, L. D. Danny. 2013. "The Potential of Wind Energy to Largely Displace Existing Canadian Fossil Fuel and Nuclear Electricity Generation." *Energy* 50:93–102.

Hatt, Ken. 2009. "Considering Complexity: Toward a Strategy for Non-Linear Analysis." *Canadian Journal of Sociology* 34(2):313–47.

Hatt, Ken. 2013. "Social Attractors: A Proposal to Enhance 'resilience Thinking' about the Social." *Society & Natural Resources* 26(1):30–43.

Hawken, Paul, Amory Lovins, and L. Hunter Lovins. 1999. *Natural Capitalism: Creating the next Industrial Revolution*. Boston: Little, Brown and Co.

Haya, Barbara. 2007. *Failed Mechanism: How the CDM Is Subsidizing Hydro Developers and Harming the Kyoto Protocol*. Berkeley: International Rivers.

Heemskerk, Eelke M. 2013. "The Rise of the European Corporate Elite: Evidence from the Network of Interlocking Directorates in 2005 and 2010." *Economy and Society* 42(1):74–101.

Heemskerk, Eelke M. and Frank Takes. 2014. "The Corporate Elite Community Structure of Global Capitalism." Under review.

Held, David, Charles Roger, and Eva-Maria Nag. 2013. "A Green Revolution: China's Governance of Energy and Climate Change." in *Climate governance in the developing world*, edited by David Held, Charles Roger, and Eva-Maria Nag. Cambridge: Polity Press.

Henshaw, Philip F. 1978. *The Infinite Society: A Guide to Growth Induced Collapse*. Denver (CO): Self-published.

Herring, Horace. 1999. "Does Energy Efficiency Save Energy? The Debate and Its Consequences." *Applied Energy* 63(3):209–26.

Hilferding, Rudolf. 1981. *Finance Capital: A Study of the Latest Phase of Capitalist Development*. London: Routledge & K. Paul.

Hillary, John. 2013. *The Poverty of Capitalism: Economic Meltdown and the Struggle for What Comes next*. London: Pluto Press.

- Holliday, Charles O., Stephan Schmidheiny, and Philip Watts. 2002. *Walking the Talk: The Business Case for Sustainable Development*. Berrett-Koehler Publishers.
- Hopwood, Bill, Mary Mellor, and Geoff O'Brien. 2005. "Sustainable Development: Mapping Different Approaches." *Sustainable Development* 13(1):38–52.
- Hsu, Carolyn. 2010. "Beyond Civil Society: An Organizational Perspective on State–NGO Relations in the People's Republic of China." *Journal of Civil Society* 6(3):259–77.
- Huber, Joseph. 1985. *Die Regenbogengesellschaft. Ökologie und Sozialpolitik*. Frankfurt am Main: Fisher Verlag.
- Huber, Matthew T. 2009. "Energizing Historical Materialism: Fossil Fuels, Space and the Capitalist Mode of Production." *Geoforum* 40(1):105–15.
- Hunt, C. S. and H. E. Aldrich. 1998. "The Second Ecology: Creation and Evolution of Organizational Communities." *Research in Organizational Behavior* 20:267–301.
- Hurrell, Andrew and Sandeep Sengupta. 2012. "Emerging Powers, North–South Relations and Global Climate Politics." *International Affairs* 88(3):463–84.
- Huxtable, David. 2014. "Global Civil Society." Unpublished manuscript, University of Victoria.
- ICC. 2012. *Green Economy Roadmap*. Paris: International Chamber of Commerce.
- ICC. 2013. *ICC Business Perspective on Climate Change Negotiations: Competitiveness – Opportunity – Partnership*. Paris: International Chamber of Commerce.
- ICCP. 2008. "ICCP Membership Information." *International Climate Change Partnership*. Retrieved June 23, 2014 (<http://iccp.net/membership.html>).
- International Forum on Globalization. 2011. *Outing the Oligarchy: Billionaires Who Benefit from Today's Climate Crisis*. San Francisco: International Forum on Globalization.
- International Forum on Globalization. 2013. *Billionaires' Carbon Bomb: The Koch Brothers and the Keystone XL Pipeline*. San Francisco: International Forum on Globalization.
- IPCC. 2014a. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. edited by Thomas F. Stocker, Dahe Qin, Gian-Kasper Plattner, Melinda M. B. Tignor, Simon K. Allen, Judith Boschung, et al. Cambridge and New York: Cambridge University Press.

- IPCC. 2014b. *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. edited by C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, et al. Cambridge and New York: Cambridge University Press.
- IPCC. 2014c. *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, et al. Cambridge and New York: Cambridge University Press.
- Isla, Ana. 2009. "Who Pays for the Kyoto Protocol?" Pp. 199–217 in *Eco-sufficiency and Global Justice: Women Write Political Ecology*, edited by Ariel Salleh. London and North Melbourne: Pluto Press and Spinifex Press.
- IUCN. 1980. *World Conservation Strategy: Living Resource Conservation for Sustainable Development*. Gland, Switzerland: IUCN-UNEP-WWF.
- Jackson, Tim. 2011. *Prosperity without Growth: Economics for a Finite Planet*. Routledge.
- Jacques, Peter J., Riley E. Dunlap, and Mark Freeman. 2008. "The Organisation of Denial: Conservative Think Tanks and Environmental Skepticism." *Environmental Politics* 17(3):349–85.
- Jaeger, Carlo C., Leonidas Paroussos, Diana Mangalagiu, Roland Kupers, Antoine Mandel, and Joan David Tabara. 2011. *A New Growth Path for Europe: Generating Prosperity and Jobs in the Low-Carbon Economy - Synthesis Report*. Berlin: Global Climate Forum.
- Jeidels, Otto. 1905. "Das Verhältnis Der Deutschen Grossbanken Zur Industrie Mit Besonder Berücksichtigung Der Eisenindustrie (Relation of the German Big Banks to Industry with Special Reference to the Iron Industry)." *Staats- und sozialwissenschaftliche Forschungen* 24(2):1–271.
- Jessop, Bob. 1990. *State Theory: Putting the Capitalist State in Its Place*. University Park (PA): Pennsylvania State University Press.
- Jessop, Bob. 2002. *The Future of the Capitalist State*. Cambridge (UK), Malden (MA): Polity Press.
- Jessop, Bob. 2012. "Economic and Ecological Crises: Green New Deals and No-Growth Economies." *Development* 55(1):17–24.
- Jones, Charles A. and David L. Levy. 2007. "North American Business Strategies towards Climate Change." *European Management Journal* 25(6):428–40.

- Jorgenson, Andrew K. 2012. "The Sociology of Ecologically Unequal Exchange and Carbon Dioxide Emissions, 1960-2005." *Social Science Research* 41:242–52.
- Kanninen, Tapio. 2013. *Crisis of Global Sustainability*. London: Routledge.
- Katz, Hagai. 2006. "Gramsci, Hegemony, and Global Civil Society Networks." *Voluntas: International Journal of Voluntary and Nonprofit Organizations* 17(4):333–48.
- Katz, Hagai and Helmut Anheier. 2006. "Global Connectedness: The Structures of Transnational NGO Networks." Pp. 249–65 in *Global Civil Society 2005/6*, edited by Helmut K. Anheier, Mary Kaldor, and Marlies Glasius. London: SAGE Publications.
- Kentor, Jeffrey. n. d. "The Divergence of Economic and Coercive Power in the World Economy 1960 to 2000: A Measure of Nation-State Position."
- Knight, Kyle W., Eugene A. Rosa, and Juliet B. Schor. 2013. "Could Working Less Reduce Pressures on the Environment? A Cross-National Panel Analysis of OECD Countries, 1970–2007." *Global Environmental Change* 23(4):691–700.
- Koenig, Thomas and Robert Gogel. 1981. "Interlocking Corporate Directorships as a Social Network." *American Journal of Economics and Sociology* 40(1):37–50.
- Kolk, Ans and Jonatan Pinkse. 2007. "Multinationals' Political Activities on Climate Change." *Business & Society* 46(2):201–28.
- Kolk, Ans and Rob van Tulder. 2010. "International Business, Corporate Social Responsibility and Sustainable Development." *International Business Review* 19(2):119–25.
- Krackhardt, David and Robert N. Stern. 1988. "Informal Networks and Organizational Crises: An Experimental Simulation." *Social Psychology Quarterly* 51(2):123–40.
- Lane, Lee and J. Eric Bickel. 2013. *Solar Radiation Management: An Evolving Policy Option*. Washington, D.C.: American Enterprise Institute.
- Latouche, Serge. 2006. *Le pari de la décroissance*. Paris: Fayard.
- Lauvergeon, Anne. 2007. "Energy Security and Climate Change: A European View." Pp. 51–80 in *Energy Security and Climate Change*, edited by John Deutch, Anne Lauvergeon, and Widhyawan Prawiraatmadja. The Trilateral Commission.
- Lawson, James. 2009. "Power, Political Economy, and Environmental Governance: Staple Chains as Media of Power." *International Journal of Green Economics* 3(1):28–47.

- Lawson, James. 2011. "‘Everywhere in Chains’: Work, Commodity Chain Analysis, and the Subversion of Accountability." *Work Organisation, Labour and Globalisation* 5(1):40–57.
- Lenferna, Georges Alexandre. 2014. *Betting on Climate Failure - The Ethics and Economics of Fossil Fuel Divestment*. Rochester, NY: Social Science Research Network.
- Levy, David L. 1997. "Business and International Environmental Treaties: Ozone Depletion and Climate Change." *California Management Review* 39(3):54–71.
- Levy, David L. and Daniel Egan. 1998. "Capital Contests: National and Transnational Channels of Corporate Influence on the Climate Change Negotiations." *Politics and Society* 26(3):337–61.
- Levy, David L. and Daniel Egan. 2003. "A Neo-Gramscian Approach to Corporate Political Strategy: Conflict and Accommodation in the Climate Change Negotiations." *Journal of Management Studies* 40(4):803–29.
- Levy, David L. and Aundrea Kelley. 1997. *The International Climate Change Partnership Case: An Industry Association Faces the Climate Change Issue*. Washington, D.C.: World Resources Institute.
- Levy, David L. and Ans Kolk. 2002. "Strategic Responses to Global Climate Change: Conflicting Pressures on Multinationals in the Oil Industry." *Business and Politics* 4(3):275–300.
- Levy, David L. and André Spicer. 2013. "Contested Imaginaries and the Cultural Political Economy of Climate Change." *Organization* 20(5):659–78.
- Lewis, David Charles. n.d. "Fujio Cho 1937— Biography." in *Encyclopedia of Business*, 2nd edition. Retrieved 2014-07-31 (www.referenceforbusiness.com/biography/A-E/Cho-Fujio-1937.html).
- Li, Minqi. 2009. "Capitalism, Climate Change and the Transition to Sustainability: Alternative Scenarios for the US, China and the World." *Development and Change* 40(6):1039–61.
- Lipietz, Alain. 1992. *Towards a New Economic Order: Postfordism, Ecology, and Democracy*. New York: Oxford University Press.
- Lipietz, Alain. 2012. *Qu'est-ce que l'écologie politique? La grande transformation du XXIe siècle*. 3rd ed. Paris: Les Petits Matins.
- Lipietz, Alain. 2013. "Fears and Hopes: The Crisis of the Liberal-Productivist Model and Its Green Alternative." *Capital and Class* 37(1):127–41.

- Liverman, Diana M. 2009. "Conventions of Climate Change: Constructions of Danger and the Dispossession of the Atmosphere." *Journal of Historical Geography* 35(2):279–96.
- Lo, Alex Y. 2013. "Carbon Trading in a Socialist Market Economy: Can China Make a Difference?" *Ecological Economics* 87:72–74.
- Lo, Alex Y. and Michael Howes. 2013. "Powered by the State or Finance? The Organization of China's Carbon Markets." *Eurasian Geography and Economics* 54(4):386–408.
- Lohmann, Larry. 2006. *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power*. Uppsala (Sweden): The Dag Hammarskjöld Centre.
- Lohmann, Larry. 2008a. "Carbon Trading, Climate Justice and the Production of Ignorance: Ten Examples." *Development* 51(3):359–65.
- Lohmann, Larry. 2008b. "Carbon Trading: Solution or Obstacle."
- Lohmann, Larry. 2008c. "Chronicle of a Disaster Foretold: REDD-with-Carbon-Trading."
- Lohmann, Larry. 2011. "Capital and Climate Change." *Development and Change* 42(2):649–68.
- Lohmann, Larry. 2012a. "A Rejoinder to Matthew Paterson and Peter Newell." *Development and Change* 43(5):1177–84.
- Lohmann, Larry. 2012b. "Financialization, Commodification and Carbon: The Contradictions of Neoliberal Climate Policy." *Socialist Register* 48:85–107.
- Lohmann, Larry. 2014. "Performative Equations and Neoliberal Commodification: The Case of Climate." Pp. 158–80 in *Nature™ Inc: environmental conservation in the neoliberal age*, edited by Robert Fletcher, Wolfram Dressler, and Bram Büscher. Tucson: University of Arizona Press.
- Lohmann, Larry and Steffen Böhm. 2012. "Critiquing Carbon Markets: A Conversation." *Ephemera: Theory & Politics in Organization* 21(1):81–96.
- Lomborg, Bjørn, ed. 2010. *Smart Solutions to Climate Change*. Cambridge: Cambridge University Press.
- Lovins, L. Hunter. 2010. "Climate Capitalism: The Business Case for Climate Protection." *Pace Environmental Review* 27(3):735–79.
- Lovins, L. Hunter and Boyd Cohen. 2011. *Climate Capitalism: Capitalism in the Age of Climate Change*. New York: Hill and Wang.

- Luce, R. Duncan and Albert D. Perry. 1949. "A Method of Matrix Analysis of Group Structure." *Psychometrika* 14(2):95–116.
- Lukes, Steven. 2005. *Power: A Radical View*. 2nd ed. New York: Palgrave Macmillan.
- Macartney, Huw. 2008. "Articulating Particularistic Interests: The Organic Organisers of Hegemony in Germany and France." *British Journal of Politics & International Relations* 10(3):429–51.
- Macartney, Huw. 2009. "Variegated Neo-Liberalism: Transnationally Oriented Fractions of Capital in EU Financial Market Integration." *Review of International Studies* 35(2):451–80.
- Magdoff, Fred and John Bellamy Foster. 2011. *What Every Environmentalist Needs to Know about Capitalism: A Citizen's Guide to Capitalism and the Environment*. NYU Press.
- Mallet, Victor. 2011. "From Bicycle Repairman to Riding out the Business Cycle." *Financial Times*, June 20, 14.
- Malm, Andreas. 2012. "China as Chimney of the World: The Fossil Capital Hypothesis." *Organization & Environment* 25(2):146–77.
- Markussen, Peter and Gert Tinggaard Svendsen. 2005. "Industry Lobbying and the Political Economy of GHG Trade in the European Union." *Energy Policy* 33(2):245–55.
- Martínez-Alier, Joan. 2009. "Socially Sustainable Economic de-Growth." *Development and Change* 40(6):1099–1119.
- Martínez-Alier, Joan. 2012. "Environmental Justice and Economic Degrowth: An Alliance between Two Movements." *Capitalism Nature Socialism* 23(1):51–73.
- Marx, Karl. 1938. *The German Ideology*. New York: Lawrence & Wishart.
- Marx, Karl. 1976. *Capital: A Critique of Political Economy, Volume 1*. Fourth. London: Penguin Books.
- Marx, Karl. 1978. *Capital: A Critique of Political Economy, Volume 2: The Process of Circulation of Capital*. edited by Ernst Mandel. Penguin Books.
- Marx, Karl and Friedrich Engels. 2000. *Manifesto of the Communist Party*.
- Matthews, Karine and Matthew Paterson. 2005. "Boom or Bust? The Economic Engine behind the Drive for Climate Change Policy." *Global Change, Peace & Security* 17(1):59–75.

- May, Christopher. 2006. "Global Corporate Power and the UN Global Compact." Pp. 273–82 in *Global Corporate Power*, edited by Christopher May. Boulder (CO) and London: Lynne Rienner Publishers.
- McCright, Aaron M. and Riley E. Dunlap. 2000. "Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counter-Claims." *Social Problems* 47(4):499–522.
- McCright, Aaron M. and Riley E. Dunlap. 2003. "Defeating Kyoto: The Conservative Movement's Impact on U.S. Climate Change Policy." *Social Problems* 50(3):348–73.
- McCright, Aaron M. and Riley E. Dunlap. 2010. "Anti-Reflexivity: The American Conservative Movement's Success in Undermining Climate Science and Policy." *Theory, Culture & Society* 27(2-3):100–133.
- McCright, Aaron M., Riley E. Dunlap, and Chenyang Xiao. 2013. "Perceived Scientific Agreement and Support for Government Action on Climate Change in the USA." *Climatic Change* 119(2):511–18.
- McCright, Aaron M., Riley E. Dunlap, and Chenyang Xiao. 2014. "Increasing Influence of Party Identification on Perceived Scientific Agreement and Support for Government Action on Climate Change in the United States, 2006–12." *Weather, Climate, and Society* 6(2):194–201.
- McKeon, Nora. 2009. *The United Nations and Civil Society: Legitimizing Global Governance - Whose Voice?*. London: Zed Books.
- Meadows, D. H., D. L. Meadows, and J. Randers. 1992. *Beyond the Limits: Global Collapse or a Sustainable Future*.
- Meadows, Donella H., Dennis L. Meadows, Jørgen Randers, and William W. Behrens III. 1972. *The Limits to Growth*. New York: Universe Books.
- Meadows, Donella H., Jørgen Randers, and Dennis L. Meadows. 2004. *Limits to Growth: The 30-Year Update*. White River Junction (VT): Chelsea Green.
- Meckling, Jonas. 2011. *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading*. Cambridge (MA): MIT Press.
- Meyer, John W., David John Frank, Ann Hironaka, Evan Schofer, and Nancy Brandon Tuma. 1997. "The Structuring of a World Environmental Regime, 1870–1990." *International Organization* 51(4):623–51.
- Meyer, Michel. 1993. *Questions de Rhétorique. Langage, Raison et Séduction*. Paris: Librairie générale française.

- M'Gonigle, Michael. 2000. "A Dialectic of Centre and Territory: The Political Economy of Ecological Flows and Spatial Relations." Pp. 3–16 in *Nature, Production, Power: Towards an Ecological Political Economy*, edited by Fred P. Gale and Michael M'Gonigle. Cheltenham (UK) and Northampton (MA): Edward Elgar.
- M'Gonigle, Michael. 2002. "Between Globalism and Territoriality: The Emergence of an International Constitution and the Challenge of Ecological Legitimacy." *Canadian Journal of Law and Jurisprudence* 15(2):159–74.
- M'Gonigle, Michael and Louise Takeda. 2013. "The Liberal Limits of Environmental Law: A Green Legal Critique." *Pace Environmental Law Review* 30(3):1005–1115.
- Miliband, Ralph. 1969. *The State in Capitalist Society*. London: Weidenfeld & Nicolson.
- Mills, C. Wright. 1956. *The Power Elite*. New York: Oxford University Press.
- Milne, Richard. 2009. "Nordic Capitalist Champion." *Financial Times*, March 23.
- Ming, Chuang Peck. 2012. "A Sustainable Plan - Unilever CEO Paul Polman Shares the Consumer Giant's Vision for the Future of the Company - and the World." *Business Times, The (Singapore)*, May 19.
- Mintz, Beth and Michael Schwartz. 1985. *The Power Structure of American Business*. Chicago: University of Chicago Press.
- Mirowski, Philip and Dieter Plehwe, eds. 2009. *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*. Cambridge, MA: Harvard University Press.
- Mitchell, Timothy. 2011. *Carbon Democracy: Political Power in the Age of Oil*. London and New York: Verso Books.
- Mizruchi, Mark S. 1996. "What Do Interlocks Do? An Analysis, Critique, and Assessment of Research on Interlocking Directorates." *Annual Review of Sociology* 22:271–98.
- Mol, Arthur P. J. 2002. "Ecological Modernization and the Global Economy." *Global Environmental Politics* 2(2):92–115.
- Mol, Arthur P. J. and Gert Spaargaren. 2002. "Ecological Modernization and the Environmental State." *Research in Social Problems and Public Policy* 10:33–52.
- De Mooij, Ruud A., Michael Keen, and Ian W. H. Parry. 2012. *Fiscal Policy to Mitigate Climate Change: A Guide for Policymakers*. Washington, D.C.: International Monetary Fund.

- Morton, Katherine. 2005. "The Emergence of NGOs in China and Their Transnational Linkages: Implications for Domestic Reform." *Australian Journal of International Affairs* 59(4):519–32.
- Mumford, Lewis. 2010. *Technics and Civilization*. Chicago: University of Chicago Press.
- Murphy, Raymond and Maya Murphy. 2012. "The Tragedy of the Atmospheric Commons: Discounting Future Costs and Risks in Pursuit of Immediate Fossil-Fuel Benefits." *Canadian Review of Sociology* 49(3):247–70.
- Najam, Adil. 2013. "World Business Council for Sustainable Development: The Greening of Business or a Greenwash?" Pp. 29–48 in *Critical Perspectives on Corporate Environmentalism and the Greening of Organizations*, vol. 6, edited by John M. Jermier. London: SAGE Publications.
- Nell, Edward, Willi Semmler, and Armon Rezai. 2011. "Economic Growth and Climate Change: Cap-And-Trade or Emission Tax?" Pp. 95–110 in *After Cancún*, edited by Elmar Altvater and Achim Brunnengräber. VS Verlag für Sozialwissenschaften.
- Newell, Peter and Matthew Paterson. 1998. "A Climate for Business: Global Warming, the State and Capital." *Review of International Political Economy* 5(4):679–703.
- Newell, Peter and Matthew Paterson. 2010. *Climate Capitalism: Global Warming and the Transformation of the Global Economy*. Cambridge: Cambridge University Press.
- Newell, Richard G., William A. Pizer, and Daniel Raimi. 2013. "Carbon Markets 15 Years after Kyoto: Lessons Learned, New Challenges." *The Journal of Economic Perspectives* 27(1):123–46.
- Nikiforuk, Andrew. 2010. *Tar Sands: Dirty Oil and the Future of a Continent*. Vancouver, BC: Greystone Books.
- Nikiforuk, Andrew. 2012. *The Energy of Slaves: Oil and the New Servitude*. Greystone Books.
- Oberthür, Sebastian and Hermann E. Ott. 1999. *The Kyoto Protocol: International Climate Politics for the 21st Century*. Berlin and Heidelberg: Springer-Verlag.
- O'Connor, James. 1998. *Natural Causes: Essays in Ecological Marxism*. New York: Guilford Press.
- Odum, Howard T. 2007. *Environment, Power, and Society for the Twenty-First Century: The Hierarchy of Energy*. New York: Columbia University Press.

- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Overbeek, Henk. 2004. "Transnational Class Formation and Concepts of Control: Towards a Genealogy of the Amsterdam Project in International Political Economy." *Journal of International Relations and Development* 7(2004):113–41.
- Pagnamenta, Robin. 2010. "Champion of the Nuclear Option - Anne Lauvergeon Built a Global Giant but Faces Challenges at Home and Abroad, Writes Robin Pagnamenta." *The Times*, March 8.
- Palmer, Donald. 1987. "The Dual Nature of Corporate Interlocks." Pp. 60–74 in *The Structure of Power in America: The Corporate Elite as a Ruling Class*, edited by Michael Schwartz. New York: Holmes & Meier.
- Paretsky, Nick. 2004. "Policy-Planning Organizations and Capitalist Support for Industrial Policy, 1970-1984." Columbia (MO): University of Missouri-Columbia.
- Park, Jacob, Matthias Finger, and Ken Conca. 2008. "The Death of Rio Environmentalism." in *The Crisis of Global Environmental Governance: Toward a New Political Economy of Sustainability*, edited by Ken Conca, Matthias Finger, and Jacob Park. London: Routledge.
- Parmar, Inderjeet. 2002. "American Foundations and the Development of International Knowledge Networks." *Global Networks* 2(1):13–30.
- Parmar, Inderjeet. 2012a. "Foundation Networks and American Hegemony." *European Journal of American studies* 7(1).
- Parmar, Inderjeet. 2012b. *Foundations of the American Century: The Ford, Carnegie, and Rockefeller Foundations and the Rise of American Power*. New York: Columbia University Press.
- Parson, Edward A. 2014. "Climate Engineering in Global Climate Governance: Implications for Participation and Linkage." *Transnational Environmental Law* 3(1):89–110.
- Parson, Edward A. and Lia N. Ernst. 2013. "International Governance of Climate Engineering." *Theoretical Inquiries in Law* 14(1):307–38.
- Paterson, Matthew. 2001. "Climate Policy as Accumulation Strategy: The Failure of COP6 and Emerging Trends." *Global Environmental Politics* 1(2):10–18.
- Paterson, Matthew. 2009. "Post-Hegemonic Climate Politics." *The British Journal of Politics and International Relations* 11(1):140–58.

- Paterson, Matthew. 2010. "Legitimation and Accumulation in Climate Change Governance." *New Political Economy* 15(3):345–68.
- Paterson, Matthew. 2013. "Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading by Jonas Meckling." *Environmental Politics* 22(6):1042–44.
- Paterson, Matthew, Matthew Hoffmann, Michele Betsill, and Steven Bernstein. 2014. "The Micro Foundations of Policy Diffusion toward Complex Global Governance: An Analysis of the Transnational Carbon Emission Trading Network." *Comparative Political Studies* 47(3):420–49.
- Paterson, Matthew and Peter Newell. 2012. "Of Heroes, Villains and Climate Capitalism: A Response to Larry Lohmann." *Development and Change* 43(5):1171–75.
- Pauli, Gunter A. 2010. *The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs. A Report to the Club of Rome*. Paradigm Publications.
- Pearson, Ben. 2007. "Market Failure: Why the Clean Development Mechanism Won't Promote Clean Development." *Journal of Cleaner Production* 15(2):247–52.
- Peetz, David and Georgina Murray. 2013. "Financialization of Corporate Ownership and Implications for the Potential for Climate Action." Pp. 99–125 in *Institutional Investors' Power to Change Corporate Behaviour: International Perspectives*, vol. 5, *Critical Studies in Corporate Responsibility, Governance and Sustainability*. Emerald Group Publishing.
- Peetz, David, Georgina Murray, and Werner Nienhüser. 2013. "The New Structuring of Corporate Ownership." *Globalizations* 10(5):711–30.
- Petechuk, David. n.d. "Henri Proglio 1949— Biography - Entering the Water Business, Loaded with Debt." in *Encyclopedia of Business*, 2nd edition. Retrieved 2014-07-31 (www.referenceforbusiness.com/biography/M-R/Proglio-Henri-1949.html)
- Piédalue, Gilles. 1976. "Les Groupes Financiers Au Canada 1900-1930 - Étude Préliminaire." *Revue d'histoire de l'Amérique française* 30(1):3–34.
- Van der Pijl, Kees. 1984. *The Making of an Atlantic Ruling Class*. London: Verso.
- Van der Pijl, Kees. 1998. *Transnational Classes and International Relations*. London: Routledge.
- Van der Pijl, Kees, Otto Holman, and Or Raviv. 2011. "The Resurgence of German Capital in Europe: EU Integration and the Restructuring of Atlantic Networks of Interlocking Directorates after 1991." *Review of International Political Economy* 18(3):384–408.

- Pinkse, Jonatan and Ans Kolk. 2009. *International Business and Global Climate Change*. London: Routledge.
- Pinkse, Jonatan and Ans Kolk. 2012. "Addressing the Climate Change—sustainable Development Nexus: The Role of Multistakeholder Partnerships." *Business & Society* 51(1):176–210.
- Plehwe, Dieter and Bernhard Walpen. 2006. "Between Network and Complex Organization: The Making of Neoliberal Knowledge and Hegemony." Pp. 27–50 in *Neoliberal Hegemony: A Global Critique*, edited by Dieter Plehwe, Bernhard Walpen, and Gisela Neunhöffer. London: Routledge.
- Polanyi, Karl. 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston (MA): Beacon Press.
- Polimeni, John M. and Raluca Iorgulescu Polimeni. 2006. "Jevons' Paradox and the Myth of Technological Liberation." *Ecological Complexity* 3(4):344–53.
- Porter, John. 1955. "Elite Groups: A Scheme for the Study of Power in Canada." *The Canadian Journal of Economics and Political Science* 21(4):498–512.
- Porter, John. 1956. "Concentration of Economic Power and the Economic Elite in Canada." *The Canadian Journal of Economics and Political Science* 22(2):199–220.
- Prechel, Harland N. 2000. *Big Business and the State: Historical Transitions and Corporate Transformations, 1880s-1990s*. Albany (NY): SUNY Press.
- Prell, Christina, Kuishuang Feng, Laixiang Sun, Martha Geores, and Klaus Hubacek. 2014. "The Economic Gains and Environmental Losses of US Consumption: A World-Systems and Input-Output Approach." *Social Forces* 93(1):405–28.
- Pulver, Simone. 2003. "Organizing Business: Industry NGOs in the Climate Debates." in *Annual meeting of the American Sociological Association*. Atlanta (GA).
- Pulver, Simone. 2007. "Making Sense of Corporate Environmentalism: An Environmental Contestation Approach to Analyzing the Causes and Consequences of the Climate Change Policy Split in the Oil Industry." *Organization & Environment* 20(1):44–83.
- Le Quéré, C., R. J. Andres, T. Boden, T. Conway, R. A. Houghton, J. I. House, et al. 2013. "The Global Carbon Budget 1959-2011." *Earth System Science Data* 5:165–85.
- Randers, Jørgen. 2012. *2052: A Global Forecast for the next Forty Years. Report to the Club of Rome*. White River Junction (VT): Chelsea Green.

- Redclift, Michael. 2005. "Sustainable Development (1987-2005): An Oxymoron Comes of Age." *Sustainable Development* 13(4):212–27.
- Reuters. 2014a. "China's Guangdong Sells 530,000 Carbon Permits at 60 Yuan." *Point Carbon News*, April 3.
- Reuters. 2014b. "China's Hubei Sells 2 Mln Carbon Permits in First Auction." *Point Carbon News*, March 31.
- Reuters. 2014c. "EU Carbon Falls as Traders Rethink European CO2 Data." *Point Carbon News*, April 2.
- Reuters. 2014d. "'Oversold' EU Carbon Rebounds, Weak Auction Fails to Spook Market." *Point Carbon News*, March 31.
- Ricketts, Aidan. 2013. "Investment Risk: An Amplification Tool for Social Movement Campaigns Globally and Locally." *Journal of Economic and Social Policy* 15(3).
- Roberts, J. Timmons. 2011. "Multipolarity and the New World (dis)order: US Hegemonic Decline and the Fragmentation of the Global Climate Regime." *Global Environmental Change* 21(3):776–84.
- Robertson, Morgan M. 2006. "The Nature That Capital Can See: Science, State, and Market in the Commodification of Ecosystem Services." *Environment and Planning D: Society and Space* 24(3):367–87.
- Robinson, William I. 2004. *A Theory of Global Capitalism*. Baltimore: Johns Hopkins University Press.
- Robinson, William I. and Jerry Harris. 2000. "Towards a Global Ruling Class? Globalisation and the Transnational Capitalist Class." *Science & Society* 64(1):11–54.
- Robock, Alan. 2008. "20 Reasons Why Geoengineering May Be a Bad Idea." *Bulletin of the Atomic Scientists* 64(2):14–18.
- Robock, Alan. 2012. "Will Geoengineering With Solar Radiation Management Ever Be Used?" *Ethics, Policy & Environment* 15(2):202–5.
- Rockström, Johan, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart III Chapin, Eric F. Lambin, et al. 2009. "A Safe Operating Space for Humanity." *Nature* 461:472–75.
- Rogers, Jim. 2007. "An Efficient Mix of Energy." *The News & Observer*, February 16, A15.

- Rosenbloom, Daniel and James Meadowcroft. 2014. "Harnessing the Sun: Reviewing the Potential of Solar Photovoltaics in Canada." *Renewable and Sustainable Energy Reviews* 40:488–96.
- Rowe, James K. 2005. "Corporate Social Responsibility as Business Strategy." Pp. 130–70 in *Globalization, Governmentality and Global Politics: regulation for the Rest of Us?*. London and New York: Routledge.
- Roy, William G. 1997. *Socializing Capital: The Rise of the Large Industrial Corporation in America*. Princeton (NJ): Princeton University Press.
- Sabidussi, Gert. 1966. "The Centrality Index of a Graph." *Psychometrika* 31(4):581–603.
- Salleh, Ariel. 1997. *Ecofeminism as Politics: Nature, Marx and the Postmodern*. London: Zed Books.
- Salleh, Ariel. 2010. "Climate Strategy : Making the Choice between Ecological Modernisation or Living Well." *Journal of Australian Political Economy* 66:118.
- Sandler, Blair. 1994. "Grow or Die: Marxist Theories of Capitalism and the Environment." *Rethinking Marxism* 7:38–57.
- Sapinski, Jean Philippe. 2003. "Le discours zapatiste : analyse structurale d'un mythe politique." Masters thesis, Montréal: Département d'anthropologie, Université de Montréal.
- Schaeffer, Jean-Marie. 2007. *La Fin de L'exception Humaine*. Paris: Gallimard.
- Scherer, Andreas Georg and Guido Palazzo. 2011. "The New Political Role of Business in a Globalized World: A Review of a New Perspective on CSR and Its Implications for the Firm, Governance, and Democracy." *Journal of Management Studies* 48(4):899–931.
- Schnaiberg, Allan. 1980. *The Environment: From Surplus to Scarcity*. New York: Oxford University Press.
- Schreuder, Yda. 2009. *The Corporate Greenhouse: Climate Change Policy in a Globalizing World*. London and New York: Zed Books.
- Scott, John. 1985. "Theoretical Framework and Research Design." Pp. 1–19 in *Networks of Corporate Power: A Comparative Analysis of Ten Countries*, edited by Frans N Stokman, Rolf Ziegler, and John Scott. Cambridge: Polity Press.
- Scott, John. 1997. *Corporate Business and Capitalist Class*. New York: Oxford University Press.

- Scott, John. 2000. *Social Networks Analysis: A Handbook*. 2nd ed. London, Thousand Oaks (CA) and New Delhi: SAGE Publications.
- Seidman, Stephen B. 1983. "Network Structure and Minimum Degree." *Social Networks* 5(3):269–87.
- Sharife, Khadija and Patrick Bond. 2013. "Payment for Ecosystem Services versus Ecological Reparations: The 'Green Economy', Litigation and Redistributive Eco-Debt Grant." *South African Journal on Human Rights* 29(1):144–69.
- Shumate, Michelle and Lori Dewitt. 2008. "The North/South Divide in NGO Hyperlink Networks." *Journal of Computer-Mediated Communication* 13:405–28.
- Simonis, U. E. 1989. "Ecological Modernization of Industrial Society — Three Strategic Elements." Pp. 119–37 in *Economy and Ecology: Towards Sustainable Development, Economy & Environment*, edited by F. Archibugi and P. Nijkamp. The Hague: Springer Netherlands.
- Sims, Ralph E. H. 2014. "Renewable Energy and Climate Change Mitigation: An Overview of the IPCC Special Report." Pp. 91–110 in *Weather Matters for Energy*, edited by Alberto Troccoli, Laurent Dubus, and Sue Ellen Haupt. New York: Springer New York.
- Skjaerseth, Jon Birger and Tora Skodvin. 2003. *Climate Change and the Oil Industry: Common Problem, Varying Strategies*. Manchester: Manchester University Press.
- Sklair, Leslie. 2001. *The Transnational Capitalist Class*. Oxford (UK) and Malden (MA): Blackwell Publishing.
- Sklair, Leslie and David Miller. 2010. "Capitalist Globalization, Corporate Social Responsibility and Social Policy." *Critical Social Policy* 30(4):472–95.
- Smil, Vaclav. 2003. *Energy at the Crossroads: Global Perspectives and Uncertainties*. Cambridge, Mass: MIT Press.
- Smil, Vaclav. 2014. *Making the Modern World: Materials and Dematerialization*. Chichester (UK): John Wiley & Sons.
- Smith, Jackie. 1997. "Characteristics of the Modern Transnational Social Movement Sector." Pp. 42–58 in *Transnational social movements and global politics: solidarity beyond the state*, edited by J. Smith, C. Chatfield, and R. Pagnucco. Syracuse (NY): Syracuse University Press.
- Smith, Nicola J., Garry W. McDonald, and Murray G. Patterson. 2014. "Is There Overshoot of Planetary Limits? New Indicators of Human Appropriation of the Global Biogeochemical Cycles Relative to Their Regenerative Capacity Based on 'ecotime' Analysis." *Ecological Economics* 104:80–92.

- Smith, Richard. 2010. "Beyond Growth or beyond Capitalism?" *Real-World Economics Review* 53.
- Smith, Richard. 2011. "Green Capitalism: The God That Failed." *Real-World Economics Review* 2011(56):112–44.
- Soederberg, Susanne. 2007. "Taming Corporations or Buttressing Market-Led Development? A Critical Assessment of the Global Compact." *Globalizations* 4(4):500–513.
- Soroos, Marvin S. 2005. "Garrett Hardin and Tragedies of Global Commons." Pp. 35–50 in *Handbook of Global Environmental Politics*, edited by Peter Dauvergne. Cheltenham (UK) and Northampton (MA): Edward Elgar Publishing.
- Spaargaren, Gert and Arthur P. J. Mol. 1992. "Sociology, Environment, and Modernity: Ecological Modernization as a Theory of Social Change." *Society & Natural Resources* 5(4):323–44.
- Spaargaren, Gert and Arthur P. J. Mol. 2013. "Carbon Flows, Carbon Markets, and Low-Carbon Lifestyles: Reflecting on the Role of Markets in Climate Governance." *Environmental Politics* 22(1):174–93.
- Spash, Clive L. 2013. "The Shallow or the Deep Ecological Economics Movement?" *Ecological Economics* 93:351–62.
- Steffek, Jens. 2009. "Discursive Legitimation in Environmental Governance." *Forest Policy and Economics* 11(5–6):313–18.
- Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2009. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Paris: Commission on the Measurement of Economic Performance and Social Progress.
- Stokman, Frans N., Rolf Ziegler, and John Scott, eds. 1985. *Networks of Corporate Power: A Comparative Analysis of Ten Countries*. Cambridge: Polity Press.
- Strunz, Sebastian. 2014. "The German Energy Transition as a Regime Shift." *Ecological Economics* 100:150–58.
- Sukhdev, Pavan. 2011. "Foreword." Pp. xvii – xx in *Prosperity without growth: Economics for a finite planet*. London: Routledge.
- Sullivan, Sian. 2010. "The Environmentality of 'Earth Incorporated': On Contemporary Primitive Accumulation and the Financialisation of Environmental Conservation." Conference paper, *An Environmental History of Neoliberalism*, Lund University, May 6. Retrieved 2012-05-05 (<http://siansullivan.net/2010/06/16/the-environmentality-of-earth-incorporated/>).

- Sullivan, Sian. 2013. "Banking Nature? The Spectacular Financialisation of Environmental Conservation." *Antipode* 45(1):198–217.
- Sunderland, Ruth. 2009. "Women Don't Just Want a Seat on the Board. They Want to Help Build the World's Future." *The Observer*, October 18.
- Szarka, Joseph. 2012. "The EU, the USA and the Climate Divide: Reappraising Strategic Choices." *European Political Science* 11:31–40.
- Tansey, Rachel. 2013. *The COP19 Guide to Corporate Lobbying: Climate Crooks and the Polish Government's Partners in Crime*. Amsterdam: Corporate Europe Observatory and Transnational Institute.
- Tarrow, Sidney. 2012. *Strangers at the Gates: Movements and States in Contentious Politics*. Cambridge: Cambridge University Press.
- The Corner House. 2013. *Energy Alternatives: Surveying the Territory*. Sturminster Newton (UK): The Corner House.
- The Ecologist. 1972. *A Blueprint for Survival*. London: Earthscan.
- The Ecologist. 1993. *Whose Common Future? Reclaiming the Commons*. London: Earthscan.
- The Economist. 2014. "In Search of the Good Business." *The Economist*, August.
- The Green New Deal Group. 2008. *A Green New Deal: Joined-up Policies to Solve the Triple Crunch of the Credit Crisis, Climate Change and High Oil Prices*. London: The Green New Deal Group.
- The Green New Deal Group. 2013. *A National Plan for the UK: From Austerity to the Age of the Green New Deal*. London: The Green New Deal Group.
- Tienhaara, Kyla. 2014. "Varieties of Green Capitalism: Economy and Environment in the Wake of the Global Financial Crisis." *Environmental Politics* 23(2):187–204.
- True, Jacqui and Michael Mintrom. 2001. "Transnational Networks and Policy Diffusion: The Case of Gender Mainstreaming." *International Studies Quarterly* 45(1):27–57.
- UIA. 2012. *Yearbook of International Organizations*. Brussels: Brill.
- UNEP. 1972. *Report of the United Nations Conference on the Human Environment*. Nairobi (Kenya): UNEP.
- UNEP. 2011. *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Nairobi (Kenya): United Nations Environment Programme.

- Useem, Michael. 1978. "The Inner Group of the American Capitalist Class." *Social Problems* 25(3):225–40.
- Useem, Michael. 1979. "The Social Organization of the American Business Elite and Participation of Corporation Directors in the Governance of American Institutions." *American Sociological Review* 44(4):553–72.
- Useem, Michael. 1984. *The Inner Circle: Large Corporations and the Rise of Business Political Activity in the U.S. and U.K.* New York: Oxford University Press.
- Victor, Peter A. 2010. "Questioning Economic Growth." *Nature* 468(18 November 2010):370–71.
- Victor, Peter A. 2011. "Growth, Degrowth and Climate Change: A Scenario Analysis." *Ecological Economics* 84:206–12.
- Vlachou, Andriana. 2014. "The European Union's Emissions Trading System." *Cambridge Journal of Economics* 38(1):127–52.
- Vormedal, Irja. 2008. "The Influence of Business and Industry NGOs in the Negotiation of the Kyoto Mechanisms: The Case of Carbon Capture and Storage in the CDM." *Global Environmental Politics* 8(4):36–65.
- Vormedal, Irja. 2011. "From Foe to Friend? Business, the Tipping Point and U.S. Climate Politics." *Business and Politics* 13(3):Article 5.
- Wainwright, Joel and Geoff Mann. 2013. "Climate Leviathan." *Antipode* 45(1):1–22.
- Wara, Michael. 2007. "Is the Global Carbon Market Working?" *Nature* 445(7128):595–96.
- Ward, Andrew. 2007. "Energy Chief in the Vanguard of Action to Tackle Global Warming." *Financial Times*, January 22, 8.
- Warhurst, Alyson. 2005. "Future Roles of Business in Society: The Expanding Boundaries of Corporate Responsibility and a Compelling Case for Partnership." *Futures* 37(2–3):151–68.
- WBCSD. 2009. *Vision 2050 Regional Engagement Program (REP): Summary of REP Events Feedback / Key Messages*. Geneva: World Business Council for Sustainable Development.
- WBCSD. 2010. *Vision 2050: A New Agenda for Business*. Geneva: World Business Council for Sustainable Development.
- WBCSD. 2014. *Co-Optimizing Solutions: Water and Energy for Food, Feed and Fiber*. Geneva: World Business Council for Sustainable Development.

- WCED. 1987. *Our Common Future*. Oxford: Oxford University Press.
- Weart, Spencer R. 2008. *The Discovery of Global Warming*. Cambridge (MA): Harvard University Press.
- Whitehouse, Lisa. 2003. "Corporate Social Responsibility, Corporate Citizenship and the Global Compact." *Global Social Policy* 3(3):299–318.
- Wijkman, Anders and Johan Rockström. 2012. *Bankrupting Nature: Denying Our Planetary Boundaries*. Routledge.
- Williams, Raymond. 1983. *Keywords: A Vocabulary of Culture and Society*. London: Fontana Press.
- Windolf, Paul. 2002. *Corporate Networks in Europe and the United States*. New York: Oxford University Press.
- Wood, Peter John and Frank Jotzo. 2011. "Price Floors for Emissions Trading." *Energy Policy* 39(3):1746–53.
- World Bank Group. 2011. *Mobilizing Climate Finance: A Paper Prepared at the Request of G20 Finance Ministers*. Washington, D.C.: The World Bank Group.
- Wright, Christopher and Daniel Nyberg. 2014. "Creative Self-Destruction: Corporate Responses to Climate Change as Political Myths." *Environmental Politics* 23(2):205–23.
- Wu, Libo, Haoqi Qian, and Jin Li. 2014. "Advancing the Experiment to Reality: Perspectives on Shanghai Pilot Carbon Emissions Trading Scheme." *Energy Policy* In press.
- York, Richard. 2006. "Ecological Paradoxes: William Stanley Jevons and the Paperless Office." *Human Ecology Review* 13(2):143–47.
- York, Richard. 2012. "Do Alternative Energy Sources Displace Fossil Fuels?" *Nature Climate Change* 2(6):441–43.
- York, Richard and Eugene A. Rosa. 2003. "Key Challenges to Ecological Modernization Theory: Institutional Efficacy, Case Study Evidence, Units of Analysis, and the Pace of Eco-Efficiency." *Organization & Environment* 16(3):273–88.
- York, Richard, Eugene A. Rosa, and Thomas Dietz. 2003. "Footprints on the Earth: The Environmental Consequences of Modernity." *American Sociological Review* 68(2):279–300.

- Young, Nathan and Aline Coutinho. 2013. "Government, Anti-Reflexivity, and the Construction of Public Ignorance about Climate Change: Australia and Canada Compared." *Global Environmental Politics* 13(2):89–108.
- Young, Zoe. 2002. *A New Green Order? The World Bank and the Politics of the Global Environmental Facility*. London and Sterling (VA): Pluto Press.
- Zedillo, Ernesto, ed. 2008a. *Global Warming: Looking Beyond Kyoto*. Washington, D.C.: Brookings Institution Press.
- Zedillo, Ernesto. 2008b. "Introduction." Pp. 1–10 in *Global Warming: Looking Beyond Kyoto*, edited by Ernesto Zedillo. Washington, D.C.: Brookings Institution Press.