FISEVIER

Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha



Multipolarity and the new world (dis)order: US hegemonic decline and the fragmentation of the global climate regime[☆]

J. Timmons Roberts*

Center for Environmental Studies, Brown University, 135 Angell St., Providence, RI 02912 USA

ARTICLE INFO

Article history: Received 22 October 2010 Received in revised form 28 March 2011 Accepted 29 March 2011 Available online 5 May 2011

Keywords:
Equity
Justice
Globalization
Climate policy
Negotiations
Copenhagen
International relations
International development

ABSTRACT

The international climate change negotiations leading to and including the Copenhagen and Cancun Conferences of the Parties in 2009 and 2010 have shown a very different balance of power from those of the 1997 Kyoto round. This "New World dis(Order)" is characterized by insecurity of the United States in the face of economic and political decline $vis-\dot{a}-vis$ China; fragmentation of the Group of 77 developing nations negotiating bloc; and weakening of the European Union, which was cut out entirely from the group negotiating the Copenhagen Accord. In addition to old alignments of developing countries based on solidarity, negotiating blocs have fractured along lines of responsibility for climate change, capability to address it, and national vulnerability to climate risks. This paper assesses whether, over the past two decades, negotiations have come closer to meeting basic criteria of international climate justice, and chronicles how environmental negotiations have come to reflect a different and shifting balance of power. Drawing insights from Giovanni Arrighi and Beverly Silver's analyses of US hegemonic decline and the rise of China, the article argues that the roots of the worst stubbornness by the US in recent climate talks lie in growing insecurity about its ability to provide jobs for its workers in a future where all sorts of work is moving to China and India.

© 2011 Elsevier Ltd. All rights reserved.

1. Introduction

In Copenhagen in December 2009, two decades worth of hard, international negotiations to address climate change by thousands of participants seemed to have broken down. On the line was the ability of the United Nations system to manage a problem vast in scale, devastating in potential consequences, and entirely "wicked" in complexity. Old local, national and international political structures have strained to adapt to the biophysical, political, and economic uncertainties of the day. Climate change thus appears to be a defining and crucial test of a "New World (dis)Order" in the making (see Sonnenfeld and Mol, 2011).

The "New World dis(Order)" seen at Copenhagen was characterized by insecurity of the US in the face of its economic and political decline *vis-à-vis* China; fragmentation of the Group of 77 developing nations negotiating bloc; and weakening of the European Union, formally world leader in climate action. Some of the splinter groups from the Group of 77 developing nations (G-77) and China (now 134 nations) made stronger demands for action by

the wealthy nations, including compensation and assistance for the damages done by inevitable destabilization of the climate. The EU was entirely cut out of the group that in the end negotiated the core of the Copenhagen Accord behind closed doors, the US and "BASIC": Brazil, South Africa, India and China.

There are two sides to the equation of climate change. On the causative side, agricultural practices, forest clearing, and the burning of carbon-based fuels are at the root of production chains that sustain modern life. Efforts to address this "mitigation" side of the problem were nearly the sole focus of negotiations for a decade (1991–2001). On the impacts side, current and projected destabilization of the global climate threatens communities and whole societies very unequally (IPCC, 2007; Richardson et al./Copenhagen Science Conference 2010; Roberts and Parks, 2007). Generating, governing, distributing and utilizing funds to help developing nations cope with the inevitable changes has exploded into a complex and contentious set of negotiations on "adaptation" and "finance" (Roberts et al., 2011).

At their core, international climate change negotiations have boiled down to differing perceptions of justice in the global North and South. In the decade leading up to the 15th Conference of Parties (COP 15) to the United Nations Framework Convention on Climate Change (UNFCCC), in Copenhagen, a social movement for "climate justice" had taken off, with growing numbers of academic and policy-making publications supporting increasingly vocal

^{*} Prepared for special section/issue of Global Environmental Change "Social Theory and the Environment in the New World Dis(Order)" David Sonnenfeld and Arthur Mol, organizers.

^{*} Corresponding author. Tel.: +1 401 441 2103. E-mail address: Timmons@brown.edu.

contentions by activists and developing country governments. The core of the idea of climate injustice is that those who are least responsible for the problem are suffering the worst impacts of climate change, with the least capacity to address those impacts (Simms, 2000; Athanasiou and Bear, 2002; Roberts and Parks, 2007; Angus, 2009). A central demand is that those who created the problem have an historical responsibility to repay their "climate debt" for the atmospheric space they have taken, to those who did not. Climate injustice can be defined in many ways and examined at many scales: minority and poor populations within each nation are less able to prepare for, cope with, and recover from climate disasters than are wealthier elites (Environmental Justice, 2009). My focus here is on differences between nations' contributions to the climate change problem and on their positions in the evolving negotiations.

Have two decades of climate change negotiations since Rio moved the international political system closer to addressing climate justice? And what are the prospects for an international agreement on climate change as we move from Copenhagen and Cancun to negotiations in Durban and beyond? This article has two linked goals: (1) explaining fragmentation in the global South, and (2) understanding the roots of resistance by the US Senate and executive branch to a meaningful and binding climate treaty. In Section 2, I briefly lay out some of the core dimensions of international climate justice and assess major steps along the negotiations path, from the foundational UNFCCC meetings in Rio de Janeiro (1992), to subsequent talks in Kyoto (1997), Copenhagen (2009), Cancun (2010) and beyond. My conclusion is that we are not moving closer to climate justice: national (self-)interests and back-room dealing have repeatedly forced justice concerns off the table, to be replaced by political expedience and power politics.

Section 3 describes the increasing fragmentation of the negotiation process over these years, as formal negotiating and ad hoc groups have proliferated, going from seven at Kyoto, to 15 in the Bonn (2010) meetings. In every one of these phases, the US was seen by nearly everyone close to the negotiations as a key actor whose leadership would be fundamental, since it was both wealthy (and therefore seen as able to act), and the world's largest emitter of greenhouse gases. Without the US taking action, many poorer and smaller nations have seen it as pointless to take their own actions to reduce emissions. The only binding treaty that has emerged was the 1997 Kyoto Protocol, which was incremental by design. While Kyoto set up important structures and initiated important cuts in emissions in Europe and Japan, it made only marginal differences in global emissions while excluding most of the world from binding limits on their greenhouse gas emissions.

The paper then takes a theoretical turn in Section 4, applying insights from the work of Giovanni Arrighi and Beverly Silver (2001), who describe chaos in the global capitalist system as the declining hegemonic power (the US) moves into its "autumn." This perspective explains well the insecurity of the US in making binding commitments for itself at a time when China, arguably the rising hegemon, has had no binding commitments. As I conclude later, the worst of US "pigheadedness" on climate change is rooted in domestic as well as global economic restructuring and the (economic) unsustainability of its development model. While Arrighi and Silver's work focused on economic and political shifts more broadly and did not address climate change politics, they make a series of key observations about the need for leadership from a rising hegemon and the role of transnational social movements in guiding this transition away from conflict and to a peaceful, positive transition. My hope is to show the value of social theory for revealing deep, underlying dynamics integrally involved in addressing global environmental problems such as climate change.

2. Copenhagen and climate justice

The still evolving history of climate negotiations has been told over and over again, sometimes quite clearly (see e.g. Luterbacher and Sprinz, 2001; Okereke, 2009; Ott et al., 2008; Müller, 2008; IISD, 2010 Earth Negotiations Bulletin briefings; etc.). After a quick summation, this section lays out some of the basic dimensions of climate justice by which that history can be assessed. The goal of this section is to address the question: Are we moving towards greater climate justice? The reason to ask this question is to determine if the arc of agreements is in a positive or negative direction (as judged against the criterion of climate justice). This, in turn, provides a foundation for analysis in later sections on the relationship of the direction of that arc to the erosion of US economic hegemony (Section 4) and explosion of negotiating groups in the climate talks (Section 3), respectively.

The concept of "international climate justice" can be operationalised with eight criteria. (i) A climate treaty would be just if it respected procedural justice, giving all nations "equal voice and participation," and not giving wealthy or large nations monopoly power at key junctures in the talks.² (ii) A just agreement would be based on an equitable sharing of the global burden of reducing emissions, and that wealthier countries should go first and help poorer nations avoid massive growth of greenhouse gas emissions while still meeting their development goals. (iii) Science should guide our actions - the rate of emissions reductions should be based on our best understanding of "atmospheric space," and we should respond when the bulk of scientific evidence suggests we may be straying into pushing the atmospheric system beyond "tipping points" which would cause major ecological and social disruptions. There are several elements of the "targets" that need to be set for that to happen. (iv) The Intergovernmental Panel on Climate Change (IPCC) reports have repeatedly put that tipping point at a temperature rise of 2 °C above pre-industrial levels, and newer data and meta-analyses indicate that 1.5 or 1 °C would be far safer (Richardson et al., 2010). (v) The 2007 IPCC report also summarizes scientific studies to say that *emissions reductions* will have to be 80–95% below 1990 levels by 2050, and at least 25–40% below that baseline by 2020. The IPCC targets are almost certainly too modest. (vi) A just solution that avoids the worst damage to coastal populations requires that global emissions "peak" and begin to decline by 2015 according to the IPCC, and there is a global consensus that the wealthy countries need to peak much sooner than the poor, (vii) Whether a just international climate policy could include the trading of permits to emit greenhouse gases has split the environmental and environmental justice movements. In principle, it does not necessarily matter for climate justice whether emissions reductions are driven by regulation, taxation on carbon, or a cap-and-trade system (or economic collapse, for that matter, if the impacts were somehow justly distributed). However a series of climate justice groups have taken a hard stand against trading of

¹ Six of the eight focus on the mitigation side of climate justice, one on process, and one on adaptation. These eight dimensions are some of the major elements, but there are dozens—even hundreds of more detailed parts of the negotiations that one could focus upon. There is some overlap with Shue's (1992), Müller's (1999) and Paterson's (2001) elements of a just climate policy (see also Albin, 2001). There are many elements that could be added, especially on the governance, collection and distribution of adaptation finance, technology transfer and intellectual property rights, on what counts for carbon sinks and agriculture, Reducing Emissions from Deforestation and Forest Degradation (REDD), and many elements of process.

² As one anonymous reviewer usefully pointed out, there is much room to debate whether it is just to grant such exclusive rights to national states (as opposed to communities, indigenous nations, etc.), and what such equal voice might mean (speaking rights or veto power, etc.).

carbon permits as being an appropriation of the atmosphere for private benefit.³ The remainder of this paper could be spent debating this issue. However it is enough for now to say that a just solution would not place heavy carbon taxes on the poor, nor raise their energy costs disproportionately as compared to their income. (viii) Lastly, in a just world, the costs of adapting to climate change should be borne by those who proportionately caused the problem, and should not come from the poor who need precious funding for their other pressing needs like health, education, and basic infrastructure. This suggests that major financial flows will be needed from the global North to the South for climate adaptation (see Roberts et al., 2011).

It turns out that we have a treaty with good language on several of these elements of climate justice: the UN Framework Convention on Climate Change. Negotiated in 1992 before and in Rio de Janeiro at the huge UN Conference on Environment and Development and eventually ratified by 191 nations, the UNFCCC agreed that Parties should act in a way that would "avoid dangerous climate change" and that Parties would act according to equity and their "common but differentiated responsibility and respective capabilities". The treaty also promised "new and additional" funding for poorer nations to adapt to climate change. Each part of "The Convention" language was carefully crafted but equally vague to avoid binding commitments, something that was already being called for in 1991 in the run-up to Rio (see e.g. Bodansky, 2001; Paterson, 2001; Okereke, 2009). So the words were nice, but they were just that. The difficult parts - the details - were pushed off until later. The Framework Convention remains in effect, and making it more concrete has been the focus of great attention since it is the only global climate agreement the US has ratified.

In efforts to put the UNFCCC into binding language requiring action of the Parties, consensus has repeatedly broken down into power politics. This happened in the Kyoto round of climate negotiations. In Japan in 1997, 129 nations agreed to a more concrete deal on how to begin the process of actually reducing greenhouse gas emissions. Though stretching over months and years before the event, the key elements of the Kyoto deal were decided in "Green Room" sessions in the middle of the last night, between the eager European Union on the one hand, and the hesitant countries of the JUSSCANNZ coalition (Japan, US, Switzerland, Canada, Australia, Norway and New Zealand) on the other, who wanted to move much more slowly on emissions reductions. Justice principles were on the table - per capita emissions rights (most heralded by India), and even the Polluter Pays Principle of each country having an "historical responsibility" for the greenhouse gases it put into the atmosphere (advanced by

At crunch time, the key negotiations in Kyoto's green rooms excluded nearly all developing nations, so the first test, of procedural justice, failed. Key demands of the US were met, including that the treaty allow purchase of emissions reductions from other countries. And of course, the US signed but never ratified the treaty. The modest accomplishment of Kyoto was a five percent reduction of *absolute* emissions from 1990 levels by a small group of wealthy countries. Proposals for the far more just solution of reducing emissions on a *per capita* basis were deferred for future consideration:

Chairman Raul Estrada

I thank you very much. May I ask again the distinguished delegate of the USA if they have another suggestion to propose in

connection with the proposals made by the distinguished delegate of India He does.

United States of America

It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence [to a globally equal share of emissions per capita] are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in.⁴

This "grandfathering" of emissions – where high polluters retained the right to pollute at nearly those levels for the first commitment period – fails the second climate justice test, on burden-sharing grounds.

The US signed but never ratified the Kyoto Protocol (see Falkner, 2005; Paterson, 2009), and the treaty stumbled along, gaining enough key participants to go into effect only in 2005. This was quite close to the deadline for negotiating a successor treaty, due for the 15th Conference of the Parties (COP-15) in Copenhagen in 2009. As explored further in the second part of this paper, the preparatory negotiations and the conference itself showed a starkly different balance of power from those of the mid 1990s. In Copenhagen, the developing nation bloc, consisting of G-77 and China, made far stronger demands for action by the wealthy nations, both on mitigation action and adaptation funding, and on a series of other issues. In particular, island states and China demanded that developed countries follow the science in the IPCC reports such that there be 25–40% percent reductions by 2020, and 80-95% by 2050 (UNFCCC, 2009b AWG-LCA Submissions of Parties). Even late in the Copenhagen meeting there was bracketed text (meaning there is no agreement about it) with wildly different numbers for these key passages (see Bodansky 2009; Christoff, 2010). Thus, the third climate justice test, that "science should guide our actions", was not met in Copenhagen.

On adaptation to climate change, there were growing demands at the Copenhagen negotiations that those countries suffering disproportionate climate impacts – but who did not cause the problem – should receive compensation and assistance for the damages done by inevitable destabilization of the climate. The "climate justice" and "climate debt" concepts and discourse rose from rather peripheral circles in the early 2000s to being part of some of the near-final text in the Copenhagen texts on Adaptation and Financing (negotiating texts of Tuesday, 15 December 2009). Some Parties called for 1.5% of Gross Domestic Product (GDP) in wealthy nations to be earmarked for climate adaptation and mitigation support; in other venues a minimum of US\$ 100 billion per year was seen as a down payment to keep negotiations from collapsing.

But the Copenhagen talks were destined to fail. Vast numbers of brackets indicating disagreement on central issues – even on texts written by Chair by himself – showed there was no clear route forward under normal UN procedure. And so after heads of state arrived in Copenhagen during the second week of meetings, the BASIC (Brazil, South Africa, India and China) countries and the US simply set aside the text carefully negotiated up to that point. The European Union, used to playing the role of climate leader (see Paterson, 2009), was pushed to the curb, as were smaller countries in the developing world that were not large industrializing states like BASIC.

The Copenhagen Accord that was drafted (UNFCCC, 2009a) was scientifically inadequate – the "pledge and review" program of

³ These groups include nearly all the members of the Climate Justice Now! Coalition, plus many others. See: http://www.climate-justice-now.org/category/climate-justice-movement/cjn-members/

⁴ COP3 Transcript, UNFCCC negotiations December 11, 1997, Kyoto Japan. My thanks to Aubrey Meyer of the Global Commons Institute for pointing out this key moment in the negotiations (personal communication).

voluntary emissions reductions were projected by IPCC metrics to lead us to a nearly $4\,^{\circ}\text{C}$ temperature rise (climateinteractive.org), not the 1.5 or $2\,^{\circ}\text{C}$ that most scientists believe to be the maximum to avoid high risks of dangerous climate change (IPCC, 2007). The accord fails on peaking, emissions reductions, process, and nearly every other justice principle.

There seemed to be one slightly brighter spot: on adaptation finance, where the Copenhagen Accord included what seemed to be two clear and fairly ambitious promises. The finance offer was \$US 30 billion "Fast Start Finance" over 2010-2012, ramping up to US \$100 billion per year by 2002. However even these seemingly straightforward promises have led to major debates after Copenhagen because their language was so unclear (Roberts et al., 2010; Stadelmann et al., 2010).

Following the Copenhagen Conference of the Parties to the UNFCCC, the Cancun 2010 negotiations showed much dissensus and near collapse before a surprisingly positive conclusion, at least on procedural grounds. In Cancun, nations felt they had been listened to, but many of the core contentious issues were merely "kicked down the road" to the 2011 negotiations in Durban, South Africa. Many of the problems facing global climate change negotiations today are the same as those of the 1990s meetings; justice remains at the core of the stalemate (see Roberts and Parks, 2007). Understanding the roots of diplomatic gridlock and the increasing fragmentation of negotiating groups, especially of the G77, are the issues we turn to next.

3. Multipolarity and the new world (dis)order

In this section I expand on how justice positions of negotiating blocs fragmented at the Copenhagen talks (2009), and in the preparatory meetings in Bonn in 2010 leading to the 16th Conference of the Parties in Cancun (2010), illustrating the multipolarity of the new world (dis)order. In climate negotiations, there have always been more formalized and less rigid groups that bargain for representation of their interests in the targeted agreement. Of course a few nations try to stand on their own, but even the US frequently joins in statements by the so-called "Umbrella Group" of Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, the Ukraine, and the US. The Umbrella Group developed from an earlier grouping called JUSSCANNZ (pronounced "juice-cans") - consisting of Japan, Switzerland, Canada, Australia, Norway and New Zealand. The other major bargaining blocs are the EU and the "Group of 77 and China", the bloc of developing nations now numbering 134 nations (see also Bodansky (2010) and Christoff, 2010).

In earlier years, most alignments into negotiating blocs could be understood by reference to the responsibility of nations and their ease or difficulty in reducing or eliminating their use of fossil fuels (what we might call "mitigation-side fairness"). This can, for example, explain the historical gap between the European Union and the US-Canada-Australia bloc (the "carboniferous capitalism" of Dalby and Paterson 2008 - cited in Paterson, 2009): these nations have vaster land areas, extensive urban forms, and coal reserves. These blocs were built also along the dimension of capability, which can be understood in the climate negotiations as national wealth and membership in the Organization for Economic Cooperation and Development – the club of the world's wealthy nations. This factor aligned closely with bonds of solidarity, among Southern nations of the G-77 who stuck together for years in the negotiations due to their common identity as excluded from the league of wealthy nations (Roberts and Parks, 2007).

Emerging and strengthening in climate negotiations in the past few years has been a *vulnerability* dimension, which has created a whole new set of adaptation- and finance-side fairness demands, especially from low-lying nations and, more recently, those facing the loss of glacial water supplies. We are seeing the insurgence of new radical climate justice arguments from civil society groups and especially ALBA, the Bolivarian Alternative for Latin America and the Caribbean, led by Venezuela and Bolivia, who reject carbon trading in the next round of a climate treaty.⁵

The G-77 and China is a crucial and complex bloc – holding together at some times, and fracturing at others. The G-77 and China has a series of other fractions within it, each fighting for representation in G-77 positions. These sub-groups now include:

- BASIC (Brazil, South Africa, India and China), previously the BRICs (Brazil, Russia, India, and China);
- The LDCs (Least Developed Countries, 45 of the world's poorest nations, mostly in Africa);
- The African Group;
- OPEC (Oil Producing and Exporting Countries);
- Arab States (mostly in OPEC but some not);
- AOSIS (Association of Small Island States, which also includes Bangladesh and some countries *not* in the G-77, totaling 42 member states and observers)⁶;
- SIDS (Small Island Developing States different membership than AOSIS);
- ALBA, the Bolivarian Alternative for Latin America and the Caribbean – including Cuba, Venezuela, Bolivia, Nicaragua, Honduras, Dominica and Saint Vincent and the Grenadines;
- The Central American Integration System (SICA);
- The Group of Mountain Landlocked Developing Countries, which includes Armenia, Kyrgyzstan and Tajikstan⁷;
- The "Environmental Integrity Group" (EIG), consisting of Mexico, Liechtenstein, Monaco the Republic of Korea, and Switzerland the only group crossing OECD/non-OECD lines, attempting to play a brokering role between the EU and the G-77;
- CACAM (Central Asia, Caucasus, Albania, and Moldova); and
- The Coalition of Rainforest Nations, a group founded in 2007 to bargain for REDD, the plan to pay developing countries to protect standing rainforests.

The point here is not to focus on the content of these groups' negotiating positions, but rather to highlight the extent to which the negotiations are fragmenting, as even small nations can now closely tailor their statements in the negotiations to their national interests along all four dimensions described above. A single omnibus bargaining unit like the G-77 and China has proven unable to reflect these kinds of specific and multi-dimensional concerns. However that bloc does still play a key role coordinating how developing nations negotiate on foundational issues, and they have been meeting twice a day during intense negotiation times (see Appendix 1). In the next section I shift to the other end of the spectrum: to the failure of leadership in the North, with the US's economic insecurity leading to an unwillingness to lead climate negotiations, and the EU experiencing both a weakening internal consensus on climate action and a collapse in its external bargaining strength. This suggests that the stalemate on climate is but one symptom of a wider change taking place in the world, as hegemonic power shifts to the East and South.

⁵ Bolivia took a lonely stand at the end of the Cancun negotiations, opposing the agreements there as too weak and immoral. Other nations in the ALBA alliance voiced support but did not stand with Bolivia.

⁶ http://www.sidsnet.org/aosis/about.html.

Nepal attempted to build a group called the "Mountain Alliance Initiative," speaking to nations around the world. Navin Khadka reports that "Nepalese officials said they were approached by the Kyrgyz officials to join the Group of Mountain Landlocked Developing Countries but Nepal's environment secretary responded that "We don't need to do that as we have support from many mountainous countries, including those in Latin America....Moreover, we are not just bringing together landlocked mountainous countries; our support base is quite a bit wider." (Khadka, 2010).

4. US hegemonic decline: applying the lens of Arrighi and Silver

So we have seen over the past few years a sharply increasing fragmentation of international alignments in response to climate change. Looking longer term, we see an even more extreme increase in defined positions. First, there was the UNFCCC's vague but solidaristic statements in 1992, based on per capita justice and preventing dangerous climate change. Then the incrementalist and realist 1997 Kyoto regime reflected hegemonic struggle between the US and the EU (Paterson, 2009), and ended up being based on the grandfathering of past emissions, emissions trading, and the eventual withdrawal of the world's most powerful nation – its hegemon, the US.⁸ Then in the 2009/2010 Copenhagen-Cancun Round world we see a weakening in European leadership (as that bloc expanded from 17 relatively wealthy to 27 much more diverse nations), and the fragmentation of the G-77 into an even more fractious set of ad hoc negotiating groups just described.

The US was something of a foot-dragger in the 1992 Earth Summit, with President George H.W. Bush traveling to Rio and signing the UNFCCC only hesitatingly and under pressure, and agreeing to the treaty because there were no binding limits placed on the US. In the negotiations leading up to the 1997 Kyoto pact, the Clinton/Gore administration played a role of demanding binding limits also on China, India and some other developing nations, a move resisted by the G77, EU, and most environmentalists (Masood, 1997a,b). The US played a role of resisting efforts to include it in Kyoto, to the point that the country was nearly completely marginalized during George W. Bush's administration. Then President Barack Obama negotiated the 2009 Copenhagen Accord with the BASIC countries on the last negotiation day, but as we briefly reviewed in Section 2, the Accord was not a step in the direction of climate justice.

A framework I find useful to understand the shift in the dynamics of climate negotiations is to consider the massive upheaval in the global political economic system over these twenty years. Giovanni Arrighi and Beverly Silver have written a series of pieces, including their 2001 article, "Capitalism and World (dis)Order", in the Review of International Studies. The piece describes transitions over five centuries in global hegemony: from Genoese, Dutch, British and now American cycles of rise and decline. In each cycle, the rise of financial capital plays a key role, creating flexibility of accumulation for the hegemonic power's elites, and diversifying income of these elites as different types of activities in certain locations become more and then less profitable. In the US hegemonic cycle, the profitability of manufacturing in the core nations dropped sharply in the late 1970s, 1980s, and 1990s, as job-heavy production shifted to cheap labor zones such as Mexico and China. The fiscal crisis was deferred as it was in previous hegemonic cycles, as financial power sustained each hegemon beyond its time. Each hegemon, at the end of its cycle of dominance, experienced a final boom and "pursues their national interest without regard for system-level problems that require system-level solutions" (p. 271).

Arrighi and Silver argue that such global orders are very unstable. "[T]he power of the hegemonic state experiences a deflation, and a hegemonic crisis sets in.... Hegemonic crises have been characterized by three distinct but closely related processes: the intensification of interstate and inter-enterprise competition; the escalation of social conflicts; and the interstitial emergence of new configurations of power."(270–271). They argue that the final stages are

complete hegemonic breakdown and 'systemic chaos'... a situation of severe and seemingly irremediable systemic disorganization. As competition and conflicts escalate beyond the regulatory capacity of existing structures, new structures emerge interstitially and destabilize further the dominant configuration of power. Disorder tends to become self-reinforcing, threatening to provoke or actually provoking the complete breakdown in the system's organization. (Arrighi and Silver, 2001, p. 271)

To bring this back to interstate climate politics, in his landmark book, *The Long Twentieth Century*, Arrighi describes how, in the face of military and financial crisis in 1973, the US retreated from the world stage and "US strategies of power came to be characterized by a basic neglect of world governmental functions.¹⁰ It was as if the ruling groups within the US had decided that, since the world could no longer be governed by them, it should be left to govern itself'(301). Arrighi argues that, in this vacuum, oil-producing states organized an effective way to gain huge rents from petroleum (the 1973 and 1978 OPEC embargos, and carefully attempting to modulate production at other times to keep prices up) (Arrighi, 1994: 322).

Two things happened with that money. First, Arab oil producers gave foreign assistance of at least \$100 billion accumulated since that period (Shuhan et al., 2010). We do not know whether one of the goals of Arab aid has been to secure support for their position in other negotiations, such as to keep key recipients from dissenting from OPEC views in G-77 negotiations during climate change negotiations. If Arab donors did use aid that way they would not be alone: anecdotal information suggests Japan has secretly used aid in this way for votes on the International Whaling Commission, and (among other cases), and the US in 2010 publically made payments from the Copenhagen funding (most publicly, to Ecuador) provisional on the signing of the Copenhagen Accord.

Second, the oil boom money from OPEC governments was often loaned (through Western banks) to other developing countries with adjustable rates, and these rates skyrocketed when the Reagan administration in the US adopted a tight fiscal policy to regain control (Arrighi, 2001). This created a debt crisis that set back many developing countries for a decade. This failure of development to measure up to expectations has certainly strengthened the G-77's cohesiveness in the climate negotiations, even as their interests diverged (see Roberts and Parks, 2007).

Meanwhile, China's economy (and energy use/carbon emissions) has risen exponentially since 2001, threatening US global hegemony, at least in some market segments. India also has the ability to undermine US labor competitiveness in a large number of job categories long thought to be securely unexportable. Arrighi and Silver argue that the rich countries cannot compete with the ascendant nations in East Asia because of profoundly different developmental paths (especially wage rates), and they cannot be restructured "without causing social strains so unbearable that they would result in chaos rather than 'competitiveness'" (2001, p. 278). Arrighi and Silver end with the ominous warning that "If the system eventually breaks down, it will be primarily because of US resistance to adjustment and accommodation. And conversely, US adjustment and accommodation to the rising economic power of

⁸ Kyoto also of course exempted the poorer nations from any binding limits on their emissions in that round, expecting them to come inside the list of countries with binding limits only later.

 $^{^9}$ (2001), $\overset{9}{27}$:5:257–279. See also Arrighi, 1994; Arrighi Silver and Brewer 2003, 2005.

¹⁰ Reagan's administration rebuilt American swagger with saber-rattling and massive debt spending. In some of their other work, Arrighi and Silver resist the idea that since they are industrializing means that developing countries will catch up to the currently wealthy nations (2001; 2003; Arrighi, Silver and Brewer 2003, 2005). They do, however, see the rise of East Asia as the best chance to reduce global inequality.

¹¹ This statement applies to Arab oil producers, but some of the other OPEC members like Venezuela also extend foreign cooperation. Little systematic information about this assistance is available, as we have not yet been able to collect that information for our AidData.org dataset.

the East Asian region is an essential condition for a non-catastrophic transition to a new world order." (p. 279).

In his 2009 "Post-Hegemonic Climate Politics?" piece, Matthew Paterson argues that Europe has taken the lead in the area of global climate policy, surpassing the US. However in Copenhagen, we saw the rise of BASIC, especially China, as the real challenger to US hegemonic power.¹² As Arrighi and Silver say, the hegemon is typically the only power with the ability to lead the world in protecting "global public goods." This suggests that the US, as declining hegemon, is leaving its climate mess for the rising economic hegemon (seemingly China) to clean up. As Arrighi and Silver put it about economic issues: "An equally essential condition is the emergence of a new global leadership from the main centres of the East Asian economic expansion. This leadership must be willing and able to rise up to the task of providing system-level solutions to the system-level problems left behind by US hegemony"(p. 279). Whether China will be the next global hegemonic power is uncertain. And though China has the ability to mobilize extraordinary economic resources and it has invested heavily in renewable energy sources, its leadership's overall emphasis on addressing climate change remains uncertain because it has economic growth as its top priority (see also Mol, 2011). Whether China, another nation, or a regional bloc becomes the next global hegemon, Arrighi and Silver's work supports the idea that they will inherit a climate mess requiring someone to take the lead in cleaning up.

5. Discussion and conclusion

Observing many years of turmoil in negotiations over global nations' response to climate change, leading ever further away from principles and practice of climate justice, one is tempted to chalk it up to stubbornness on the part of a few selfish nations: the US and Saudi Arabia most obviously and for the longest time, but Canada might be put in this group, and also one could say China and India, for different reasons. Poor leadership by the Danish Presidency at Copenhagen was clearly a factor, as deft leadership by Mexico in Cancun confirmed. The list could go on. Certainly short-sighted selfishness has been a major factor in creating our current dire situation on climate change, but I argue here that the roots of failure to reach consensus on a global response to climate change lie in the global economic structure and its current phase of restructuring. Many nations in the global South remain frustrated that in spite of many decades of promises and striving that they face persistent inequality and stalled economic development. In the case of the US, its pigheadedness in negotiations might be seen as having been driven by insecurity in a shifting global political economy about its ability to provide jobs for its workers in the future where all sorts of work is moving to China and India.

Giovanni Arrighi and Beverly Silver point us to two central parts of that dynamic. First, while developing nations may be industrializing, the majority of citizens in those nations are not getting rich (or even getting to global middle class status in GDP/capita terms) in the process (Arrighi and Silver, 2001; Arrighi et al., 2003, 2005). This happens because lower-profit parts of the product cycle are offshored to those countries, with owners looking for cheap labor havens. ¹³ This persistent and growing inequality between and within nations exacerbates the frustration of many in the developing world about their stalled prosperity, which also dampens their enthusiasm about limiting their future growth – an issue we've discussed at length elsewhere (Roberts and Parks, 2007; Parks and Roberts, 2010). The

current article therefore begins to address two major gaps in our previous work, which was more focused on explaining non-cooperation by developing countries. Those gaps are (1) explaining fragmentation in the global South, and (2) the roots of resistance by the US Senate and executive branch to a meaningful and binding climate treaty.

For two decades now, the US has been the bull in the china shop of climate negotiations – repeatedly smashing any small progress that was being delicately arranged. It has not been alone in wrecking the negotiations, but its intransigence has provided a shield behind which many other nations can conveniently hide. The US government's unwillingness to take active steps to address this looming global crisis is exactly the kind of failure of leadership that Arrighi and Silver describe among hegemons in the "autumns" of their decline. This has been true since the Genoese, Dutch, and British rode waves of boom and bust over the past centuries. In the current case it's fairly simple: US fear of job loss to China lay behind the July 1997 Byrd-Hagel Resolution that arguably sunk the Kyoto Protocol, tying the Clinton administration's hands the summer before the COP 3 in that Japanese city. That resolution read that

the United States should not be a signatory to any protocol ... which would mandate new commitments to limit or reduce greenhouse gas emissions ... unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period, or would result in serious harm to the economy of the United States (US Senate, July 25, 1997)

US stubbornness in the climate negotiations is driven by fear of job loss and competitiveness to China, India, and elsewhere, while China and other rapidly developing nations in turn fear the treaty being used by the US and others to dampen their growth and defer their dreams.¹⁴

Global economic and geopolitical restructuring also opens up fracture lines within the bloc of G-77 and China countries, at least partially along the lines of paths of economic development. Beyond the old North-South categories of solidarity by wealth, the negotiating blocs described in Table 1 can be seen as being determined by three main factors: (i) responsibility for climate change; (ii) capability to act and help others act (both determined by position in the global economy); and (iii) vulnerability to climate impacts (a geographic factor but mostly an economic one, determined by climate, land quality, poverty, wealth, and political and economic factors - a burgeoning set of research attempts to document this). These are not merely immediate economic interests: beyond economic causation of bargaining positions, there has also been strong solidarity and identity by developing nations in the G-77 bloc due to years of poor experience in attaining their goals in the realm of development and political advancement. Climate negotiations cannot be separated from those on broader development and trade issues, nor those of a broader political nature.

The dynamics in Copenhagen between Chinese Premier Wen Jiabao and US President Barack Obama had the smell of an interaction between a rising and a declining hegemon, on an issue they both would have preferred to avoid: binding emissions reduction targets on greenhouse gases. Peter Christoff (2010) argues that China was:

...by Copenhagen... well on the way to being the global leader in clean energy technologies, and was moving ever faster along its development path. A re-emergent, cooperative USA pre-

¹² Paterson also argues that climate politics are not only about diplomatic negotiations between states, but rather firms and NGOs have developed a whole new set of carbon markets. "It is unclear if it is even *principally* about such a bargain." (2009: p. 151)

¹³ Many geographers and "commodity chain" sociologists have documented this phenomenon; see review in Dicken, 2011: 98.

¹⁴ Looking at other environmental issue areas, DeSombre (2000) argues that there are segments of US industrial and labor lobbies that gain from environmental treaties, and push for them.

Table 1Negotiating groups and positions in Kyoto and Cancun climate talks.

Kyoto negotiating groups in 1997	Goals/positions at Kyoto	Cancun negotiating Groups in 2010	Goals/positions in Cancun Round 2010*
EU-17 (European Union)	-15% of 1990 levels by 2010, EU "bubble" and tradable permits	EU-27 (European Union)	More ambitious emissions reductions (-20 or -30% by 2020) (but more fractious)
JUSSCANNZ (Japan, US, Switzerland, Canada, Australia, Norway, New Zealand)	-3% to +10% of 1990 levels by 2012; want developing countries to make binding commitments 'flexible measures' (tradable and bankable permits, joint implementation, removals by sinks)	Umbrella Group (usually made up of Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, Ukraine and the US)	Build upon the Copenhagen Accord
EIT (Economies In Transition – Central/Eastern Europe, Russia)	Baseline critical, with economic, "hot air" to sell with tradable permits	(some have joined the EU, others CACAM; Russia negotiates alone or with the Umbrella Group)	
"brokers in the middle" (Philippines, Argentina, S. Korea)	Intermediate positions	Environmental Integrity Group (Mexico, Liechtenstein, Monaco, the Republic of Korea, and Switzerland)	Much more ambitious emissions reductions/ based on the science
G-77 and China	Per capita emissions standard, historical responsibility, no binding commitments on themselves, technology transfer, and adaptation assistance from rich nations	G-77 and China	Multilateralism; continuity w/Kyoto and REDD+; financial mechanism w/Adaptation Fund and Tech Transfer; 1.5% of Appendix 1 countries' GDP in funding
Rapidly Developing Nations (BRICs-Brazil, Russia, India and China)	No limits to economic growth	BASIC (Brazil, South Africa, India and China)	No binding limits in the short term; Voluntary emissions promises; nationally appropriate mitigation actions (NAMAs)
OPEC AOSIS	No limits / compensation 20% reductions by 2005	OPEC AOSIS	Compensate for "response measures" 1.5 °C, sharp emissions reductions, Fast Start adaptation funding
"emissions entrepreneurs" (Costa Rica, Central America, Ecuador)	Carbon trading, Clean Development Mechanism (CDM) and forest credits		
		Least Developed Countries	Direct and easy access to 1.5% GDP adaptation funding thru Adaptation Fund
		CACAM (Central Asia, Caucasus, Albania and Moldova)	??
		Coalition of Rainforest Nations	REDD+
		Arab States ALBA (Cuba, Venezuela, Bolivia, Nicaragua, Honduras, Dominica and Saint Vincent and the Grenadines)	Compensate for "response measures" No trading, compensation for climate debt
		African Group Group of Mountain Landlocked Developing Countries	1.5% of GDP for adaptation funding Adaptation assistance?
		Central American Integration System	Predictable, sustained, additional adaptation funds

^{*} Cancun Round 2010 negotiations included meetings in Bonn (March and June), Bangkok (September), and Cancun (late November-early December).

sented a threat to its various leadership aspirations.... A deal constraining China's emissions could – depending on its strength – serve to limit its economic growth, internal security and capacity for future global extension. So a strong deal was not in China's short term interests.

And avoid the issue of binding targets they did. In spite of language claiming that it was an important step, the Copenhagen Accord was in fact the weakest possible agreement, since it included only a "pledge and review" approach to controlling carbon emissions, and with those pledges now totaled up, condemns us to +4° C global warming. The latter will mean an extremely disruptive future for us and for our children, since temperatures are heading to an extraordinary new level, yet to be fully explored. ¹⁵ The Cancun Agreements moved the unjust "pledge and review" method of determining action requirements further towards legitimation in the UN bargain. In terms of the most fundamental ((iv), (v), and (vi)) of the climate justice criteria reviewed in the second section of this article, the Copenhagen Accord and the Cancun Agreements mark a complete failure to "prevent dangerous climate change," an abrogation of what was agreed back in Rio in 1992.

The four meetings in Bonn, Bangkok, and Tianiin, China in 2010 were a desperate effort to "pick up the pieces" of Copenhagen and rebuild international trust and a process by which to go forward to sign a treaty at Cancun or beyond. Hopeful institutionalists and environmentalists not focused on social justice believe this is the necessary and feasible route forward - constructing global management structures through the UN (Clapp and Dauvergne, 2007; Biermann et al., 2009; etc.). Realists might laugh at any expectation of success on the road to Durban and beyond; rational choice institutionalists like Keohane (1984) and Haas et al. (1993) might not be surprised, arguing that even with weakened hegemons, that international cooperation can continue. In contrast, I would argue that any attempt to rebuild the international process on climate change requires acknowledging the structural reshaping of the global political economy going on today: fragmentation in interests along the four lines of responsibility, capability, vulnerability and solidarity, while we have a hegemonic crisis, decline and a failure in leadership. Based on historical experience with such economic transitions, Arrighi and Silver observe that the typical characteristics of this phase are sharply increased competition, social conflict, and systematic chaos, where the existing political structures cannot address the problems they face (2003: p. 271). In the context of the UN, there is little question that our multilateral governance system has been ineffective in addressing the climate crisis.

Setting aside the UN process is not an option if developing nations (especially smaller and poorer ones) are going to be part of a global solution. But the question of how to construct institutions that can muster an adequate response must be addressed: the response that could work at this geopolitical juncture might look nothing like existing proposed solutions.

Arrighi and Silver raise concerns about military conflict as the US loses economic strength but retains huge military power. With key states blocking progress, we might follow their lead in looking to social movements to guide civilization away from conflict and violence, to a peaceful transition. Short-term state interests (as acted upon by most politicians) are not bringing us to agreement; it may be that only movements built upon North-South networks which are focused on principles of climate justice and our common survival can build a global new deal.

The requirements for achieving just outcomes with respect to global climate change are steep. There is no evidence that we are moving closer to climate justice as the decades tick away (see Section

2), nor that with fragmentation and hegemonic transition/crisis (Table 1) negotiations are becoming more likely to yield sufficient and timely fruit. "Focal points" (compromise foci where diverse interests might agree) based on fairness need to be developed and advanced by social movement actors ("norm entrepreneurs", see Parks and Roberts, 2010; Acharya, 2004; Finnemore and Sikkink, 1998) and adopted by states; somehow the field of inter-state negotiations has to move from polarized and hardened positions to reasonable but scientifically adequate action. In other words, broad coalitions of social movements may have to do the essential bargaining and firmly bring proposed solutions to their states to agree.

I have in this article raised questions of whether shifts in the global economic system are driving us towards or away from consensus focal points in our response to climate change. Unfortunately the evidence suggests the latter. However sometimes just the right combination of factors has brought together effective coalitions to forge new social norms and advance viable focal points in the international arena. Much can be learned from past efforts to change these norms, as was successfully accomplished by churches, development non-governmental organizations, and charitable foundations in the Jubilee 2000 campaign, redefining what it means to hold extremely poor countries in debt. Another successful realignment of norms came with the campaign to make it unacceptable for drug companies to make big profits selling drugs to Africa and other poor nations struck by the acquired immune deficiency syndrome (AIDS) epidemic. Structure and realism suggest pessimism in the current conjuncture, but we cannot afford the luxury of fatalism - so we must focus on constructing viable ways out of the climate change negotiations impasse, based on equity, justice and pragmatism.

Acknowledgements

The author would like to thank the special issue editors, the reviewers, Paul Baer, Robert Keohane, Martin Stadelmann, David Ciplet, and Fred Huette for comments. Errors are my own.

Appendix A

Typical day of closed meetings during negotiations, from Daily Programme, UNFCCC, Bonn, June 10, 2010.

Groups other than the Convention and Protocol bodies		
08:00-09:00	African Group – Coordination meeting	
08:00-09:00	Alliance of Small Island States	
08:00-09:00	Delegation of Panama on behalf of Group SICA	
09:00-10:00	African Group – Congo Basin	
09:00-10:00	Environmental Integrity Group	
09:00-10:00	Group of 77 and China	
09:00-10:00	Umbrella Group Meeting – Heads of Delegation	
12:00-14:00	Group of Latin American and Caribbean States	
13:00-14:00	CACAM	
13:00-14:00	Coalition for Rainforest Nations	
13:00-14:00	Least Developed Countries	
13:00-13:30	Western European and other States group	
13:30-14:00	Annex I Countries	
14:00-15:00	Group of 77 and China	
18:00-19:00	African Group - Coordination meeting	
18:00-19:00	Alliance of Small Island States	

19:00–20:00 Least Developed Countries – Coordination meeting

 $^{^{\}rm 15}$ See Oxford, 2009, the Environmental Change Institute's conference on "4 Degrees" in Fall, 2009.

References

- Acharya, Amitav, 2004. How norms spreads: whose ideas matter? Norm localization and institutional change in Asian regionalism. International Organization
- Albin, C., 2001. Justice and Fairness in International Negotiation. Cambridge University Press, Cambridge.
- Angus, Ian (Ed.), 2009. The Global Fight for Climate Justice: Anticapitalist Responses to Global Warming and Environmental Destruction. Resistance Books, London. Arrighi, Giovanni, 1994. The Long Twentieth Century. Verso, London.
- Arrighi, Giovanni, Silver, Beverly, 2001. Global capitalism and the persistence of the north-south divide". Science and Society LXIV 4.
- Arrighi, Giovanni, Silver, Beverly.J., Brewer, Benjamin.D., 2003. Industrial convergence globalization, and the persistence of the north-south divide. Studies in Comparative International Development 38, 1.
- Arrighi, Giovanni, Silver, Beverly, I., Brewer, Benjamin, D., 2005. Industrial convergence and the persistence of the north-south industrial divide: a rejoinder. Studies in comparative international development. Summer.
- Athanasiou, Tom, Baer, Paul, 2002. Dead Heat: Global Justice and Climate Change. Seven Stories Press, New York.
- Biermann, Frank, Olwen, Davis, Nicolien van der, Grijp, 2009. Environmental policy integration and the architecture of global environmental governance. International Environmental Agreements: Politics, Law and Economics 9, 351–369.
- Bodansky, Daniel, 2001. The History of the Global Climate Change Regime. Urs Luterbacher and Detlef F. Sprinz International Relations and Global Climate Change. MIT Press, Cambridge, MA, 23-40.
- Bodansky, Daniel, 2010. The Copenhagen climate change conference: a post-mortem. American Journal of International Law April 2010.
- Christoff, Peter, (2010). "Copenhagen: Bad, C.O.P., good COP?" Melbourne Sustainable Society Institute web forum. http://www., sustainable., unimelb., edu., au/ content/pages/dr-peter-christoff-analysis-cop15.
- Clapp, Jennifer, Dauvergne, Peter, 2007. Paths to a Green World: The Political Economy of the Global Environment, MIT Press, Cambridge, MA.
- DeSombre, Elizabeth.R., 2000. Domestic Sources of International Environmental Policy: Industry Environmentalists and US Power. MIT Press, Cambridge, MA.
- Dicken, Peter, 2011. Global Shift Sixth Edition: Mapping the Changing Contours of the World Economy. Guilford Press. Environmental Justice, Special Issue, November 2009, Volume 2, Number 4.
- Falkner, Robert, 2005. American Hegemony and the Global Environment. International Studies Review 7, 585-599.
- Finnemore, Martha, Sikkink, Kathryn, 1998. International norm dynamics and political change. International Organization 52, 887-918.
- Haas, P.M., Keohane, R.O., Levy, M.A. (Eds.), 1993. Institutions for the Earth: Sources of Effective International Environmental Protection. The MIT Press, Cambridge, MA.
- IISD, 2010.IISD Earth Negotiations Bulletin Vol. 12 No. 472; June 14, 2010 Summary of the Bonn Climate Change Talks: 31 MAY-11 JUNE 2010. Final AWG-LCA plenary, June 11, 2010; and many other issues
- IPCC, 2007. Climate change 2007: fourth assessment report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press).
- Keohane, Robert.O., 1984. After Hegemony: Cooperation and Discord in the World Political Economy. Princeton University Press, Princeton, NJ.
- Khadka, Navin, 2010. Mountain Countries Compete to Voice Climate Concern. http://www.climatemediapartnership.org/reporting/stories/mountain-countries-compete-to-voice-climate-concern/, June 10th, 2010. Climate Change Media Partnership (accessed 24 June 2010)

- Luterbacher, Urs, Detlef, F.Sprinz, 2001. International Relations and Global Climate Change. MIT Press, Cambridge, MA.
- Masood, Ehsan, 1997a. US seeks greenhouse gas cuts from the Third World. Nature March 13.
- Masood, Ehsan, 1997b. Equity is the key criterion for developing nations. Nature Nov. 20.
- Mol, Arthur.P.J., 2011. China's Ascent and Africa's Environment. Global Environmental Change (this issue).
- Müller, Benito, 1999. Justice in Global Warming Negotiations: How to Obtain a Procedurally Fair Compromise. Oxford Institute for Energy Studies, Oxford.
- Müller, Benito. 2008. "Bali 2007- On the road again! Impressions from the Thirteenth UN Climate Change Conference" Oxford Institute for Energy Studies, Working Paper, 2008.
- Okereke, Chukwumerije, 2009. The politics of interstate climate negotiations. In: Maxwell Boykoff (Eds.), The Politics of Climate Change: A Survey. Routledge/ Europa, London.
- Ott, Herman, Wolfgang, Sterk, Rie, Watanabe, 2008. The Bali roadmap: new horizons for global climate policy. Climate Policy 8, 91-95.
- Oxford Environmental Change Initiative, 2009. 4 Degrees and Beyond: International Climate Conference 28-30 September 2009. Oxford, UK.
- Parks, Bradley.C., Roberts, J.Timmons, 2010. Climate change, social theory, and justice. Theory, Culture and Society 27 (2-3), 1-32.
- Paterson, Matthew, 2001. Principles of justice in the context of global climate change. In: Urs Luterbacher, Detlef F. Sprinz, (Eds.), Relations and Global Climate Change. MIT Press, Cambridge, MA, pp. 119-126.
- Paterson, Matthew, 2009. Post-hegemonic climate politics? The British Journal of Politics and International Relations 11, 140-158.
- Richardson, Katherine, et al. 2010. Summary document from the March 2009 Copenhagen Science Conference, University of Copenhagen.
- Roberts, J.Timmons, Parks, Bradley.C, 2007.In: A Climate of Injustice: Global Inequality North-South Politics, and Climate Policy. MIT Press, Cambridge, MA.
- Roberts, J. Timmons, Martin Stadelman, and Saleemul Huq, 2010. "Copenhagen's Climate Finance Promises: Six Key Questions." International Institute for Environment and Development (IIED) Briefing, February 2010. Online at www.iied.org/pubs/pdfs/17071IIED.pdf.
- Roberts, J. Timmons, David Ciplet, and Mizan Khan. 2011. "The Politics of International Climate Adaptation Funding: Divisions in the Greenhouse." Paper presented at "International Relations and Climate Change, February 18, Princeton University.
- Shue, Henry, 1992. The unavoidability of justice. In: Andrew, Hurrell, Barbara, Kingsbury (Eds.), The International Politics of the Environment. Clarendon Press, Oxford, pp. 373-397.
- Shuhan, Debra, Christopher Marcoux, 2010. Assessing Arab Aid: Trends, Explanations, and Unreported Transfers. Paper presented at the AidData Conference at Oxford University, March 22-25
- Simms, Andrew, 2000. An Environmental War Economy: The Lessons of Ecological Debt and Global Warming. New Economics Foundation, London.
- Sonnenfeld, David A., Mol, Arthur.P.J., 2011. Social theory and the environment in the new world (dis)order. Global Environmental Change (this issue).
- Stadelmann, Martin, I., Timmons Roberts, Saleemul Hug, 2010, Baseline for Trust: Defining 'New and Additional' Climate Funding. International Institute for Environment and Development (IIED) Briefing, June 2010. At http://www.iied.org/pubs/pdfs/17080IIED.pdf.
- UNFCCC, 2009a. Copenhagen Accord. 18 December 2009.
- UNFCCC, 2009b submissions of Parties to the Ad Hoc Working group on Long-Term Cooperative Action, Submissions throughout 2009.