

Inequality and the global climate regime: breaking the north-south impasse

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Abstract *This article explores the hypothesis that global inequality may be a central impediment to interstate cooperation on climate change policy. Conventional wisdom suggests that outcomes in international environmental politics are primarily attributable to material self-interest, bargaining power, coercion, domestic environmental values, exogenous shocks and crises, the existence of salient policy solutions, the strength of political leadership and the influence of nonstate actors. Yet none of these approaches offers a completely satisfactory explanation for the long-standing north-south divide on climate change. Drawing on social inequality literature and international relations theory, we argue that inequality dampens cooperative efforts by reinforcing 'structuralist' world-views and causal beliefs, polarizing policy preferences, promoting particularistic notions of fairness, generating divergent and unstable expectations about future behaviour, eroding conditions of mutual trust and creating incentives for zero-sum and negative-sum behaviour. In effect, inequality undermines the establishment of mutually acceptable 'rules of the game' which could mitigate these obstacles.*

Introduction

Since the early 1990s, virtually all developing countries have refused to adopt greenhouse gas emission reduction commitments in the name of *fairness*. In fact, the very suggestion that poorer nations limit their industrial growth has led to a hostile negotiating environment. At the Kyoto summit, China's lead negotiator said, 'In the developed world only two people ride in a car, and yet you want us to give up riding on a bus.' Brazil's Chancellor Luiz Felipe Lampreia said flatly 'We cannot accept limitations that interfere with our economic development' (Rossi 1997, A-15). Ten years later, after rounds and rounds of painstaking international negotiations, the position of most developing countries has not changed significantly. The head of China's National Development and Reform Commission stated in mid-2007 that '[i]t is neither fair nor acceptable to us to impose too early, too abruptly, or too bluntly measures which one would ask of developed countries. ... People are not putting the blame on those countries with large historical emissions [and] high per capita emissions' (Ford 2007).

¹The views expressed in this article are the authors' own and do not necessarily represent the views of the Millennium Challenge Corporation.

We argue that the stalemate in north-south climate negotiations is unlikely to be resolved in the absence of aggressive efforts to address issues of inequality and justice. Inequality and justice have been central issues at every major environmental conference since the 1972 UN Conference on the Human Environment in Stockholm, Sweden: Nairobi in 1982, Rio in 1992, Rio+5 in New York and Johannesburg in 2002. At negotiations leading up to the 1992 Earth Summit, southern countries feared limits on their efforts to grow economically and care for the basic needs of their people, but powerful industrialized countries such as the United States (US) refused to curtail their own excesses unless poor nations did the same. In the context of climate change negotiations, all states came under intense pressure to 'do something', and 132 countries eventually did sign the United Nations Framework Convention on Climate Change (UNFCCC). But the treaty avoided tough details. It called on nations to 'protect the climate system...on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities' (UNFCCC 1992, articles 3 and 4). However, consensus around this general principle did not translate into broad-based agreement on the issue of actual obligations (Baumert 2002).

Before the ink had even dried on the UNFCCC agreement, rich countries began to back away from earlier promises of technology transfer and technical assistance to the developing world (Najam 2002). Future rounds of negotiations foundered on the issues of equity and justice—at the first Conference of the Parties (COP) in Berlin in 1995 and subsequent meetings in Geneva, Kyoto, The Hague, Bonn, Marrakech, Buenos Aires, Montreal, Nairobi and Bali. President Bill Clinton agreed to sign on to the Kyoto Protocol in 1997, but even before he did, the US Senate voted 95 to 0 to support the Byrd-Hagel Resolution, which would block any 'unfair' treaty that did not require poor nations to also limit carbon dioxide emissions.

The Byrd-Hagel Resolution was widely denounced by leaders in the developing world. Southern policy-makers and activists were quick to point out that the average US citizen dumps as much greenhouse gas into the atmosphere as five Chinese or seventeen Indians, and that developing countries are immeasurably more vulnerable to rising tides, tropical storms, droughts and flooding than rich nations (Roberts and Parks 2007; Agarwal et al 2001). Policy-makers and 'opinion leaders' in the developing world suggested that the US was coopting and thereby undermining their position of 'climate injustice'.

Why does inequality matter?

The absence of an effective global agreement that brings rich and poor nations together to protect the climate raises broad questions about the determinants of interstate cooperation related to transnational environmental threats. Over the past 20 years, scholars have argued that outcomes in international environmental politics are shaped by material self-interest, bargaining power and the ability to strong-arm weaker states through more coercive forms of power (Sprinz and Vaahtoranta 1994; Victor 2001). Others have emphasized the importance of exogenous shocks and crises, salient solutions, a scientific burden of proof, environmental nongovernmental organizations (NGOs), postmaterialist values, epistemic communities, transnational activist networks, corporate nonstate actors, intergovernmental organizations and political leadership (Young 1994;

Wapner 1995; Haas 1990; Keck and Sikkink 1998; Levy and Kolk 2002; Meyer et al 1997). Yet interestingly, one of the variables often singled out by southern policy-makers as a major impediment to cooperation—global inequality—has not received much scholarly attention.²

In this article, we identify specific causal channels through which inequality can influence the prospects for international cooperation on global climate change. Inequality, we argue, can dampen utility-enhancing cooperative efforts by reinforcing ‘structuralist’ world-views and causal beliefs, polarizing policy preferences, making it difficult to coalesce around a socially shared understanding of what is ‘fair’, eroding conditions of trust, generating divergent and unstable expectations about future behaviour, and creating incentives for zero-sum and negative-sum behaviour.

There are three broad types of inequality that we believe figure prominently in climate change negotiations: climate-related inequality, inequality in international environmental politics and inequality in international economic regimes. First, we identify the significant asymmetries in which countries will suffer most and earliest from climate change, which countries are most responsible for the problem and which countries are expected to shoulder most of the atmospheric clean-up. We also find a significant amount of ‘bleed over’ from other issue areas, such as trade, investment, debt, intellectual property rights, biodiversity and desertification. In many of these international regimes, developing countries feel as though their concerns regarding fair processes and outcomes have been marginalized. We briefly describe each of these inequalities and explain how their existence, and the industrialized world’s reaction to them, has made it more difficult for rich and poor nations to forge a post-2012 global climate pact. We conclude by providing several historical examples that illustrate how countries with highly disparate world-views, causal beliefs, principled beliefs and policy positions have resolved their differences and cooperated on issues of mutual interest.

Inequality in the greenhouse

Inequality in responsibility for climate change

A casual observer might think that the best way to resolve the issue of responsibility for climate change would be to give all humans equal atmospheric rights and assign responsibility to individuals based on how much ‘environmental space’ they use. This is a basic rule of civil justice and kindergarten ethics: those who created a mess should be responsible for cleaning up their fair share. But in international politics things are not so simple.

With only four per cent of the world’s population, the US is responsible for over 20 per cent of all global emissions. That can be compared to 136 developing countries that together are only responsible for 24 per cent of global emissions (Roberts and Parks 2007). Poor countries therefore remain far behind wealthy countries in terms of emissions per person. Overall, the richest 20 per cent of the world’s population is responsible for over 60 per cent of its current emissions of

² There are, of course, a few noteworthy exceptions (see Chasek et al 2006; Najam 2004; Müller 1999).

greenhouse gasses. That figure surpasses 80 per cent if past contributions to the problem are considered, and they probably should be, since carbon dioxide (the main contributor to the greenhouse effect) remains in the atmosphere for over one hundred years.

These vast disparities have shaped different proposals for cleaning up the atmosphere. The Kyoto Protocol, as it was negotiated in 1997, was based on *grandfathering*: the notion that countries should reduce their emissions incrementally from a baseline year (1990). Large polluters, therefore, had their high discharges of greenhouse gases grandfathered in, and committed to relatively minor emission reductions averaging 5.2 per cent for the foreseeable future. The *carbon intensity* approach, introduced by the World Resources Institute and favoured by the second Bush administration starting in 2002, calls for voluntary efficiency changes to drive emission reductions. Under this approach, the goal is to have strong economic growth with as few carbon emissions as possible (Baumert 2002). Both of these proposals have the modest effect of departing incrementally from the current status quo without radical requirements on powerful countries.

On the other side of the spectrum are two proposals that strongly favour developing countries: *historical responsibility* and per capita *contraction and convergence*. India, China and much of the developing world favour a per capita approach, in which each person on earth is given an equal right to the ability of the atmosphere to absorb carbon. Under the per capita proposal, countries whose per capita consumption of fossil fuels is significantly lower than the world average would be given significant room to grow and emit. Most per capita plans would allow them to trade their extra carbon emission credits for the capital they need for development. By comparison, countries with highly fossil-energy-intensive economies would face sharp requirements to cut their consumption of fuels. Brazil also introduced a proposal in 1997 that would take into account the amount of damage done by nations in the past to the atmosphere's ability to absorb more greenhouse gases (Baumert 2002). This *historical responsibility* approach places the onus on countries that put greenhouse gases in the atmosphere in past decades to reduce their emissions quickly, most notably the United Kingdom (UK) and the US: a few developing countries have supported this approach and demanded that some indemnification be paid for the so-called 'carbon debt'.

Importantly, each of these four carbon accounting approaches—grandfathering, carbon intensity, historical responsibility and per capita contraction and convergence—represents a different social understanding of fairness. Grandfathering represents the entitlement principle that individuals are entitled to what they have produced. Carbon intensity represents the utilitarian principle that since everyone is worse off in the absence of joint gains, inefficient solutions are also unjust. Historical responsibility represents 'the polluter pays' principle. Finally, the per capita approach represents the egalitarian principle that every human should have equal rights to global public goods, such as atmospheric stability. These different perceptions of fairness are shaped to a large extent by the highly disparate positions that countries occupy in the global hierarchy of economic and political power. In this way, we argue that inequality has a dampening effect on cooperation by polarizing policy preferences and making it difficult for countries to arrive at a socially shared understanding of what is 'fair'.

Inequality in vulnerability to climate change

The scientific community agrees that carbon emissions will create a warmer and wetter atmosphere, and, in turn, increase flooding, hurricanes, forest fires, winter storms, and drought in arid and semi-arid regions. Climatologists have observed a sharp upswing in the frequency, magnitude and intensity of hydro-meteorological disasters over the past two decades—the five warmest years on historical record were 1998, 2002, 2003, 2005 and 2007—and hydro-meteorological disasters have more than doubled since 1996 (Goddard Institute for Space Studies 2008).

Whereas climate change is often described as ‘everybody’s problem’ or a ‘global public bad’, hydro-meteorological impacts are distributed socially across human populations (Kaul et al 1999). Some countries and communities will suffer most and earliest, and generally they are not those that caused the problem. According to the latest predictions of the Intergovernmental Panel on Climate Change (IPCC), rapidly expanding populations in Africa, Asia and Latin America are suffering disproportionately from more frequent and dangerous droughts, floods and storms (IPCC 2007). The World Bank reports that ‘[b]etween 1990 and 1998, 94 per cent of the world’s disasters and 97 per cent of all natural-disaster-related deaths occurred in developing countries’ (Mathur et al 2004, 6).

Table 1 shows the top five climate-related disasters by type and human impact. It demonstrates very clearly that although natural disasters may seem to have an underlying random origin, their impacts are anything but random. The same countries are consistently among those who suffer the most from climate disasters. Poor countries in Asia, Africa and Central America repeatedly top the list of countries with the most deaths and livelihood disruptions. The totals over 20 years are sobering, with 62 million Bangladeshis and nearly 50 million Chinese made homeless by climate disasters. Over one million were made homeless in Laos, Sudan, India, Sri Lanka, Vietnam, Philippines and Pakistan. However, many of these countries are very large in population size, which makes it difficult to judge the severity of impact for a given country. Table 2 adjusts the total number of climate-related fatalities and cases of homelessness by population size in order to provide more comparable cross-country estimates of hydro-meteorological risk. The results are startling. In relative terms, ten times more, and in some cases hundreds of times more, people are dying in the developing world than in the US and the UK. Less than one-seventh of one per cent of the US population was made homeless by hydro-meteorological disasters between 1980 and 2002.³ By comparison, in Bangladesh 45 per cent of the population was at some point made homeless during the same period.

Inequalities in vulnerability to climate change are important because poor countries suffering from rising sea levels, devastating droughts and storms, lower

³Despite the fact that Hurricane Katrina was one of the five deadliest hurricanes ever experienced by the US, the overall human impact at the national level was significantly lower than in many developing countries that have faced storms of similar strength. According to the Emergency Events database (EM-DAT), approximately 1,833 people, or 0.000006% of the total US population, died in Hurricane Katrina.

Table 1. Top five climate disasters by type and human impact, 1980–2002, as measured by number of people killed and made homeless*

<i>Top five wind storms by number of human deaths</i>			<i>Top five floods by number of human deaths</i>		
<i>Country</i>	<i>Year</i>	<i>Number killed</i>	<i>Country</i>	<i>Year</i>	<i>Number killed</i>
Bangladesh	1991	138,866	Venezuela	1999	30,000
Honduras	1998	14,600	China	1980	6,200
Bangladesh	1995	10,000	China	1998	3,656
India	1999	9,843	China	1996	2,775
Philippines	1991	5,956	Bangladesh	1987	2,379
<i>Top five droughts by number of human deaths</i>			<i>Top five heat waves by number of human deaths</i>		
<i>Country</i>	<i>Year</i>	<i>Number killed</i>	<i>Country</i>	<i>Year</i>	<i>Number killed</i>
Ethiopia	1984	300,000	India	1998	2,541
Sudan	1984	150,000	India	2002	1,030
Mozambique	1985	100,000	Greece	1987	1,000
Chad	1984	3,000	United States	1995	670
China	1988	1,400	India	1995	558
<i>Top five wind storms by number of people homeless</i>			<i>Top five floods in number of people homeless</i>		
<i>Country</i>	<i>Year</i>	<i>Number killed</i>	<i>Country</i>	<i>Year</i>	<i>Number killed</i>
China	1998	11,000,000	Bangladesh	1987	28,000,000
Bangladesh	1988	2,000,000	Bangladesh	1988	28,000,000
Philippines	1994	1,170,875	China	1998	15,850,000
Philippines	1990	1,110,020	China	1994	5,600,000
Philippines	1991	1,048,024	Pakistan	1992	4,698,670

*Rankings are authors' calculations based on reported figures as assembled by OFDA CRED/EM DAT 2004 (Center for Research on the Epidemiology of Disasters/The International Emergency Disasters Database) 2008. (Brussels: CRED), <<http://www.emdat.be/>>.

agricultural yields and increased disease burdens are unlikely to be enthusiastic about cleaning up an environmental problem that the industrialized world created in the first place.⁴ Indeed, stark inequalities in vulnerability have poisoned the negotiating atmosphere. 'If climate change makes our country uninhabitable', said Bangladeshi Atiq Rahman during the 1995 Berlin negotiations, 'we will march with our wet feet into your living rooms' (Athanasίου and Baer 2002, 23). At every subsequent COP, developing countries have underscored their small contribution to

⁴ Conversely, one might argue that self-interest would make more vulnerable countries more likely to join global efforts to reduce greenhouse gas emissions (see Sprinz and Vahtoranta 1994).

Table 2. Top 20 countries by number of people killed or made homeless between 1980 and 2002, adjusted by population size

Rank	Country	Killed per thousand population	Rank	Country	Per cent of population made homeless
1	Mozambique	5.55	1	Tonga	50.51
2	Sudan	4.84	2	Bangladesh	45.51
3	Ethiopia	4.78	3	Laos	18.94
4	Honduras	2.40	4	Samoa	17.61
5	Bangladesh	1.23	5	Sri Lanka	13.99
6	Nicaragua	0.73	6	Solomon Islands	13.67
7	Swaziland	0.60	7	Marshall Islands	11.76
8	Papua New Guinea	0.49	8	Antigua and Barbuda	11.55
9	Vanuatu	0.49	9	Philippines	10.34
10	Micronesia, Fed. States	0.42	10	Guam	10.07
11	Chad	0.41	11	Virgin Islands (US)	9.92
12	St Lucia	0.39	12	Maldives	8.20
13	American Samoa	0.37	13	Comoros	7.08
14	Somalia	0.36	14	St. Lucia	6.99
15	Djibouti	0.28	15	Pakistan	6.14
16	Philippines	0.27	16	Vanuatu	5.53
17	Haiti	0.25	17	Somalia	5.47
18	Tajikistan	0.24	18	Vietnam	4.76
19	Solomon Islands	0.23	19	Benin	4.56
20	Belize	0.19	20	Sudan	4.04
	United States	0.03		United States	0.14

the problem of climate change and their extreme vulnerability to its impacts (Müller 2001).⁵ Some climate policy analysts dismiss this line of argumentation as mere posturing, but a 2008 European Union report warns that '[c]limate change impacts will fuel the politics of resentment between those most responsible for climate change and those most affected by it' (European Union 2008, 5).

Inequality in (expected) clean-up

There are also inequalities in who is currently doing something to reduce greenhouse gas emissions and which countries will likely bear the greatest burden of atmospheric clean-up in the future. Here again, the disparities are very significant. The first important point is that, while northern governments are trying to convince the southern governments that they need to rein in their greenhouse gas emissions, most of them are not doing so in their own countries. Under the Kyoto Protocol, 'Annex I' (developed) countries committed to a 5.2 per cent (average) reduction in greenhouse gas emissions (below 1990 levels) by 2012. However, Table 3 shows that, with the exception of several European countries,

⁵Young notes that '[s]ome northerners may doubt the credibility of [threats from southern nations to damage the global climate] and advocate a bargaining strategy that offers few concessions to the developing countries. But such a strategy is exceedingly risky. Many of those located in developing countries are increasingly angry and desperate. ... Faced with this prospect, northerners will ignore the demands of the South regarding climate change at their peril' (1994, 50).

Table 3. Change in GHG emissions (1990–2004, excluding the effects of land use, land-use change and forestry)

<i>Country</i>	<i>Per cent change in GHG emissions</i>
Australia	25.10
Austria	15.70
Belgium	1.40
Canada	26.60
Denmark	– 1.10
Finland	14.50
France	– 0.80
Germany	17.20
Ireland	23.10
Italy	12.10
Japan	6.50
Netherlands	2.40
New Zealand	21.30
Norway	10.30
Portugal	41.00
Spain	49.00
Sweden	– 3.50
Switzerland	0.40
United Kingdom	– 14.30
United States	15.80
Annex I Parties to Kyoto Protocol	2.90

greenhouse gas emissions have risen significantly throughout the industrialized world since 1990. As a result, the so-called ‘demandeurs’ of global climate protection face a serious credibility problem. According to Baumert and Kete (2002, 6), ‘[m]any developing countries believe that the industrialized countries lack credibility on the issue of international cooperation to curb greenhouse gas emissions, having done little to address a problem largely of their own making.’

Many industrialized countries have also decided that rather than making cuts at home, they would prefer to achieve their emission reduction commitments by funding activities in developing countries. From a cost efficiency perspective, this makes eminent sense: the greatest opportunities for low-cost emissions reductions exist in the developing world (Stavins and Olmstead 2006). However, as we describe in greater detail below, the last 35 years of global environmental negotiations have demonstrated that developing countries have deeply held distributional concerns, which can be a significant impediment to international cooperation. According to one Group of 77 (G77) expert, the south’s ‘principal fear . . . [is] that the North is using environmental issues as an excuse to pull up the development ladder behind it—[a suspicion which] has remained unallayed through two decades of environmental diplomacy’ (Najam 1995, 249). Joanna Depledge (2002), a former UNFCCC Secretariat staff member, has similarly reported that many ‘Annex II’ countries fear efforts to curb carbon emissions in the developing world will effectively place a ‘cap’ on their economic growth.

It is also important to note that even in those northern countries which appear to have reduced or stabilized their greenhouse gas emissions, there are good reasons to believe that far less has actually been achieved than the summary statistics suggest. New research shows that many ‘service-exporting’ OECD

countries, which specialize in areas like banking, tourism, advertising, sales, product design, procurement and distribution, are actually 'net-importers' of carbon-intensive goods coming primarily from developing countries. They therefore emit no less; they simply displace their emissions (Machado et al 2001; Muradian et al 2002; Heil and Selden 2001).⁶

Finally, there are expected inequalities in the atmospheric clean-up obligations that will be negotiated in the post-Kyoto era. In order to understand this, it is helpful to revisit the basic science. Left unattended, greenhouse gas emissions are expected to rapidly accumulate in the earth's atmosphere over the next century and global average temperatures are expected to rise by 1.4–5.8°C (IPCC 2007). Between 1996 and 2004, total global carbon emissions increased from approximately six billion tons of carbon equivalent (GtC) per year to seven billion GtC. Yet scientists warn that to avoid 'dangerous anthropogenic interference with the climate system', we must cap atmospheric CO₂ concentrations somewhere between 450 and 550 parts per million (ppm), or at roughly 9.4 billion GtC per year (Baumert and Kete 2002). Very substantial emissions reductions will therefore be necessary in the near term to stabilize the climate. According to current trends, the world will likely reach 9.8 billion GtC by 2020.

The fundamental political question is who will be responsible for the bulk of *future* global greenhouse gas emissions reductions. The current accumulated stock of CO₂ in the atmosphere is largely the responsibility of rich, industrialized countries. However, growth in future emissions is expected to primarily take place in the developing world. Developed countries are on track to register roughly 1 per cent annual economic growth, whereas developing countries are averaging 3.5 per cent growth and are expected to maintain a similar growth trajectory in the coming decades. At the same time, the global population will continue to expand—from 6 billion to 8.4–12 billion people over the next 100 years—and the lion's share of this growth will take place in the developing world. Together economic development and population growth are expected to increase non-Annex I carbon emissions from 31 per cent of the total in 1990 to 60 per cent in 2030 (Wheeler and Ummel 2007; Blanchard et al 2003). Climate stabilization therefore demands that 'the South... accept the necessity of serious, costly mitigation, and immediately embark on a low-carbon development path' (Wheeler and Ummel 2007, 10).

Inequality in international environmental regimes

Climate negotiations are deeply embedded in the broader context of north-south environmental relations. In 1972, at the first international conference on the environment in Stockholm, Sweden, it quickly became evident that no consensus would emerge between developed and developing countries on the issue of global environmental protection. 'Late-developers' feared restrictions on their economic growth, emphasized the north's profligate use of planetary resources, and pushed

⁶ This pattern has been celebrated as a clear indication that rich countries are becoming more 'postmaterialist', or 'postindustrial'. However, these service economies still require extraordinary levels of energy and materials. New research has demonstrated that the production of the material goods (and their effluents) has shifted over time to poorer countries. As such, the material-intensive imports required by rich countries have carbon emissions 'embodied' within them (Machado et al 2001).

for a redistributive programme that would benefit them economically and hasten the transition towards industrialization. Developed countries wanted northern consumption off the negotiating table, southern population growth on the agenda, and nonbinding language on issues of financial assistance and technology transfer. Neither negotiating bloc was willing to budge, and deeply held feelings of marginalization and injustice among poor nations made for an adversarial negotiating atmosphere (Haas et al 1993).

The south's confrontational approach intensified in the late 1970s under the banner of the 'New International Economic Order' (NIEO). During this period, developing countries put forth a 'series of proposals . . . which included significant wealth redistribution, greater LDC participation in the world economy, and greater Third World control over global institutions and resources' (Sebenius 1991, 128). Although several significant successes were achieved (Ruggie 1983), many of the hardest-fought victories were rolled back during the years of Thatcherism, Reaganism and neoliberalism. During this period, late developers also became strident in their criticism of northern environmentalism—an environmentalism which they perceived as 'pull[ing] up the development ladder' (Najam 1995).

In future rounds of negotiations, on issues such as biodiversity, desertification and climate change, there were calls for increased financial compensation and more equitable representation (Sell 1996). Debate over the voting structure of the Global Environmental Facility, which distributes hundreds of millions of dollars of environmental aid each year, became especially conflict-ridden. Poor and middle-income countries protested 'donor dominance' and the lack of transparency in decision-making, whereas rich, industrialized countries insisted that only the 'incremental costs' of global environmental projects be financed (Keohane and Levy 1996). North-south environmental relations also suffered several important setbacks after the 1992 Rio Earth Summit (Raustiala 1997). Developed countries agreed to underwrite the participation of less developed countries in any global environmental accord to come out of Rio. Specifically, they agreed to a financial package of 100 billion US dollars (USD) a year in new and additional concessionary funds for 'sustainable development' and 15 billion USD for global environmental issues (Robinson 1992). However, wealthy OECD countries failed to honour their policy commitments (Najam 2002). At the end of the 1990s, approximately three billion USD a year was being allocated for global environmental issues (20 per cent of the Rio promise), and approximately seven billion USD a year was being given for local environmental projects (Hicks et al 2008). The reasons varied: recessions at home, new electoral coalitions in power, executive commitments that legislatures refused to ratify or sustain, or simple backsliding.

Then in 1997, at the UN General Assembly Special Session for Review and Appraisal of Agenda 21 (UNGASS), developing countries sought to strengthen the 'sustainable development' agenda by linking the issues of climate change, forests and biodiversity to issues of trade, investment, finance and intellectual property rights. This was flatly rejected by rich nations (Sandbrook 1997). Three years later, at the COP6 climate negotiations, developing country delegations expressed outrage after the (western) chairs allegedly deleted text that had been agreed upon earlier (Dessai 2001). The G77 and China also charged that many of the important decisions affecting developing countries were being made in nontransparent 'Green Room' meetings, attended only by powerful countries. This set the stage for the 2002 World Summit on Sustainable Development

(WSSD), where one reporter noted that 'effective governance is not possible under the prevailing conditions of deep distrust' (Najam 2003, 370).⁷ As we argue at greater length below, this lack of trust in north-south relations has proven to be a major obstacle to the creation of a post-2012 global climate pact.

Inequality in international economic regimes

International climate negotiations are also situated within the broader context of north-south economic relations. Stephen Krasner once said that there are 'makers, breakers, and takers' in international relations, and there is little question that developing countries are generally 'takers' in international economic regimes (Krasner 1978). '[T]he "price" of multilateral rules', explains Shadlen, 'is that [Least Developed Countries–LDCs] must accept rules written by—and usually for—the more developed countries' (Shadlen 2004, 6). Gruber (2000) argues that powerful states—particularly those with large markets—possess 'go-it-alone power' in that they can unilaterally eliminate the previous status quo and proceed gainfully with or without the participation of weaker parties. He adds,

Faced with a choice between joining the winners' new cooperative system or being completely shut out, the losers enthusiastically submit their applications for membership. They do so, however, only because the winners' actions have had the effect of removing the status quo from their choice sets, leaving them with what they view as a bad option (cooperating with the winners) and an even worse alternative (incurring the costs of exclusion). (Gruber 2000, 8)

Wade refers to a so-called 'shrinking of development space', and argues that 'the rules being written into multilateral and bilateral agreements actively prevent developing countries from pursuing the kinds of industrial and technology policies adopted by the newly developed countries of East Asia and by the older developed countries when they were developing' (2003, 622). Similarly, Birdsall et al explain how the callous—and at times opportunistic—actions of western governments have made upward mobility in the international division of labour difficult:

In the context of international trade agreements in particular, developing countries have been asked to take on obligations that have been clearly inimical to their development interests. Perhaps the most egregious example of this in recent times has been the WTO's intellectual property agreement, TRIPs [The Agreement on Trade-Related Aspects of Intellectual Property Rights]. TRIPs will have the effect on poor countries of increasing the costs of and reducing access to essential medicines and this at a time when one of the worst health epidemics ever known by man—AIDS—ravages the developing world. The flip side of the costs to these countries is the profits that will be transferred from consumers and taxpayers in poor countries to pharmaceutical companies in the rich world. In other words, TRIPs will entail a pure transfer of rents from poor to rich. (2005, 8)⁸

Other scholars of international political economy have highlighted the fact that the governance structures of international financial institutions, like the International

⁷ Another observer reported, 'the reservoir of mistrust and cynicism between prosperous Northern nations and poor Southern ones has widened since the last Earth Summit in Rio de Janeiro a decade ago' (Jeter 2002).

⁸ Also see Rodrik (2001).

Monetary Fund and World Bank, prevent the institutions' main clients (developing countries) from having any significant voting power (Woods 1999; Wade 2003).

These inequalities of opportunity have had a significant impact on how developing countries approach global environmental negotiations. Porter and Brown note that 'developing states' perceptions of the global economic structure as inequitable has long been a factor in their policy responses to global environmental issues' (1991, 124; see also Chasek et al 2006). As we argue in greater detail below, when powerful states disregard weaker states' position in the international division of labour in areas where they possess structural power (as in international economic regimes), they run a high risk of weaker states 'reciprocating' in policy areas where they possess more bargaining leverage (as in international environmental regimes).⁹

How global inequality influences international climate negotiations

We now explore the specific causal mechanisms through which inequality—in opportunity, political power and distributional outcomes—influences global climate negotiations. We argue that global inequality makes it more difficult for rich and poor nations to identify socially shared understandings of 'fair' solutions. And even when rich and poor countries can agree on general fairness principles, the heterogeneity in preferences generated by global inequality aggravates disagreements about how to make those principles operational. Global inequality also contributes to conditions of generalized mistrust, which in turn makes developing countries—countries that possess strong preferences for 'cheap' economic development and weak preferences for stringent environmental policies—more inclined to pursue self-damaging policies. Southern suspicion of northern behaviour and its inability to constrain northern opportunism also promotes risk-averse behaviour and defensive negotiating strategies.

Structuralist world-views and causal beliefs

One of the most important pathways through which global inequality can impede cooperation is by promoting 'structuralist' world-views and causal beliefs. Goldstein and Keohane define world-views as ideas that 'define the universe of possibilities for action' (1993, 9). For example, culture, religion, rationality, emotion, ethnicity, race, class, gender and identity all shape the way that humans (including policy-makers) perceive the opportunities and challenges facing them. As such, having a world-view implies '[limited] choice because it logically excludes other interpretations of reality, or at least suggests that such interpretations are not worthy of sustained exploration' (12). By limiting one's menu of available options, world-views and *causal beliefs*¹⁰ have an instrumental impact on how cost-benefit calculations are conducted. They also influence the very way in which actors come up with their own policy agendas. For example, depending on one's position in the

⁹Gupta rightly notes that '[developing country] negotiators tend to see issues holistically and link the issue to all other international issues. Thus linkages are made to international debt, trade and other environmental issues such as desertification' (2000, 58).

¹⁰Causal beliefs are 'beliefs about cause-effect relationships which derive authority from the shared consensus of recognized elites' (Goldstein and Keohane 1993, 9–10).

international system, states may seek to maximize absolute gains, relative gains, social (fairness) preferences or emotional utility. Highly risk-averse governments may want to freeze the status quo (Shadlen 2004; Gruber 2000; Abbott and Snidal 2000). Leaders who feel cheated by others may seek to punish their enemies or strengthen their relative power, regardless of the efficiency implications.¹¹ Those who see themselves as marginalized by social structures may seek to overturn regimes, rather than make changes within them (Ruggie 1983; Krasner 1985). Weak states that look down the decision tree and anticipate being exploited at the discretion of powerful states may even take self-damaging steps to promote their principled beliefs (Barrett 2003). Whatever the particular course of action, ideas about how the world works 'put blinders on people' and '[reduce] the number of conceivable alternatives' that they choose from (Goldstein and Keohane 1993, 12). World-views and causal beliefs, in this sense, influence issue definition, expectations, perceived interests, principled beliefs and ultimately the prospects for mutually beneficial cooperation.

In the developing world, we argue that 'structuralist' ideas about the origins and persistence of global inequality form the central world-view of most developing country leaders, including how they have viewed the issue of climate change.¹² The vast majority of goals developing country leaders sought since the end of the Second World War have remained elusive, and this, we believe, has shaped developing countries' perceptions of the world as fundamentally unequal and unjust. More than 20 years ago, Krasner (1985) argued that ideas about 'dependency' affected how many LDC decision-makers viewed the world, their identity in relation to other states, their goals and how such goals could be most effectively realized. 'The [dependency perspective] embraced by developing countries', Krasner argued, '[is] not merely a rationalization. It [is] the subjective complement to the objective condition of domestic and international weakness' (90). Najam puts it this way: '[t]he self-definition of the South... is a definition of exclusion: these countries believe that they have been bypassed and view themselves as existing on the periphery' (2004, 226).

There are several widely held structuralist ideas related to international environmental issues, which we argue obstruct north-south efforts to protect the climate: the idea that global environmental problems are primarily attributable to patterns of northern consumption and production, the idea that a nation's ability to implement environmental reform depends upon its position in the international division of labour and the idea that the north is using environmental issues as a ruse to thwart poor countries' economic development.¹³

¹¹ Najam (1995, 2004) explores how feelings of marginalization, frustration, anger, bitterness and hopelessness have affected bargaining positions held by developing countries, and explains that retaliatory—or 'getting even'—attitudes frequently lead to zero-sum outcomes.

¹² Through the lens of a structuralist, the international system is characterized by a division of labour. There is a global stratification system that places nations on the top, in the middle or on the bottom, and only a few manage to move up. Nations can move up or down the hierarchy, but the structure largely remains unchanged (Timmerman 1996).

¹³ Najam argues that '[w]hat galvanized the North-South polarization at [the 1972 Stockholm conference and the 1992 Rio Earth Summit] was the totally different perceptions that industrialized and developing nations hold about what the "real" environmental issues exactly are' (1995, 258).

For more than 30 years, developing countries have argued that profligate consumption and production in the industrialized world is the primary driver of most global environmental problems. During ozone negotiations in the late 1980s, Brazilian Ambassador Paulo Nogueira Batista stated: '[w]e are more concerned with the threat that is coming from the North—the patterns of production and consumption of the overdeveloped countries—rather than the threat that may come from the developing countries themselves' (quoted in Sell 1996, 108). In 2008, China's Minister of Foreign Affairs used a simple analogy to explain his government's position on global climate change:

It's like there is one person who eats three slices of bread for breakfast, and there are three people, each of whom eats only one slice. Who should be on a diet? ... If per capita energy consumption is viewed in the context of the fundamental principle that people are all born equal, then I don't think some people are justified in talking about the large emissions of China, as if they have the moral high ground. (*Economic Times* 2008)

Southern policy-makers have also indicated that their ability to implement meaningful environmental reform is conditioned by their position in the international division of labour. Porter and Brown note that, '[t]he tone and substance of North-South bargaining on environmental issues are influenced by the structure of the global economic system, which exerts indirect pressure on the policies of developing countries toward their natural resources and thus constrains the quest for global cooperation to save those resources' (1991, 124; see also Chasek et al 2006).

This can be seen in both the terminology and the arguments made by developing countries. Although wealthy, industrialized countries may dismiss claims of 'environmental imperialism', 'ecological debt', 'ecologically unequal exchange' and 'environmental load displacement' as empty and distracting rhetoric, these world-views and causal beliefs shape the way southern governments view their interests.¹⁴ Finally, a widely held perception that has endured for more than three decades is the idea that the north is willing to preserve the global environment at the expense of economic development in the south.¹⁵

Given these perceptions, we argue that it is not surprising southern countries have continued to bargain hard for the same opportunities afforded to now-wealthy countries at their early stages of development. As we describe in greater detail below, the 'structuralist' way of making sense of the world has promoted generalized mistrust among rich and poor nations, which in turn has suppressed diffuse reciprocity, and led to divergent and unstable expectations about future

¹⁴For example, in 2008, Chinese Minister of Foreign Affairs, Yang Jiechi, noted that many of China's carbon emissions are the by-product of Northern demand for manufactured goods, stating 'I hope when people use high-quality yet inexpensive Chinese products, they will also remember that China is under increasing pressure of transfer emission[s]' (*Economic Times* 2008).

¹⁵Najam notes that 'the South ... [sees] poverty, underdevelopment, and unequal global economic relations as the principal causes of its environmental problems and it [mistrusts] the North's environmental agenda as a guise to perpetuate this plight. It was this perception of causality of its environmental problems that informed the South's interests and strategy at both [the 1972 Stockholm and 1992 Rio] conferences' (1995, 254).

behaviour. Structuralist ideas have also promoted particularistic notions of fairness, a victim mentality and, in some cases, zero-sum or negative-sum behaviour.

Principled beliefs

The second way in which we argue global inequality influences the prospects for north-south cooperation is through its impact on the 'principled beliefs' of developed and developing countries. Goldstein and Keohane define principled beliefs as 'normative ideas that specify criteria for distinguishing right from wrong and just from unjust' (1993, 9). We argue that such ideas can facilitate cooperation if they are widely shared by providing a so-called 'focal point' that prevents endless haggling. They can also help cement cooperative solutions by increasing the willingness of 'domestic audiences' to support agreements negotiated internationally, weaken countries' incentives to hide information and misrepresent behaviour, and reduce the risk-aversion and self-damaging emotional behaviour of would-be cooperators.

Definitions of fairness are highly elastic and countries often manipulate definitions for their own narrow advantage. However, we argue that national understandings of fairness can influence the prospects for mutually beneficial cooperation by reducing the costs of negotiating, monitoring and enforcing agreements. First, norms and principles of fairness embodied in institutions can reduce the costs associated with negotiating international agreements. By providing information and lowering transaction costs, mutually acceptable 'rules of the game' reduce uncertainty, stabilize expectations, constrain opportunism, increase the credibility of state commitments and promote collective action (Keohane 1984; Abbott and Snidal 2000). For example, in so-called 'coordination dilemmas', where multiple equilibria exist along the Pareto frontier, establishing shared principles, norms, rules and decision-making procedures can enable states to zero in on a limited range of possible equilibria and enhance their prospects for cooperation (Krasner 1991). Shared understandings of fairness provide what game theorists call 'focal points'. By isolating one point along the contract curve that every party would prefer over a noncooperative outcome, states can stabilize expectations for future behaviour and reduce the costs of arriving at a mutually acceptable agreement (Keohane 2001; Müller 1999). Some theorists argue that these focal points will emerge spontaneously; others argue that when there are huge differences in fairness perceptions, states need to be explicit in identifying potential focal points for cooperation to occur (Schelling 1960; Barrett 2003; Müller 1999). That is to say, a mutually acceptable focal point will only emerge when states are willing to reconsider and negotiate their own beliefs about what is fair.¹⁶

The Montreal Protocol is a good example of an agreement that was guided by a fairness focal point. During the early negotiations, developed and developing countries staked out very different policy positions regarding what would constitute a 'fair' approach to combating ozone depletion (Sell 1996; DeSombre and Kauffman 1996). However, all parties eventually agreed to allow the principle

¹⁶As Müller puts it, 'we merely need a solution which is commonly regarded as sufficiently fair to remain acceptable' (1999, 3).

of 'compensatory justice' to guide the negotiations (Albin 2001; Barrett 2003). Importantly, this focal point did not spontaneously emerge from a socially shared understanding of 'appropriate' principles among countries (as the logic of social constructivism would suggest). Rather, developed and developing countries recognized that a 'negotiated justice settlement' would be necessary to hammer out a mutually acceptable agreement.¹⁷

In so-called 'collaboration games', where states have mixed motives for cooperation and face powerful free-rider incentives, fairness principles can also influence the costs of monitoring and enforcing agreements. Every state faces a strong temptation to free-ride on others' climate stabilization efforts in collaboration games because asymmetric information reduces the 'observability' of deviant behaviour, and the benefits of a stable climate are nonexcludable and nonrival. Thus, it is in every state's self-interest to disguise their preferences and misrepresent their level of contribution to the collective good. For these reasons, demanders must make compliance economically rational for more reluctant participants through financial compensation schemes, issue linkage and other forms of incentive restructuring (Young 1994, 134). This can significantly weaken incentives for cheating and defection (Krasner 1985; Abbott and Snidal 2000). Indeed, Raúl Estrada-Oyuela, one of the leading climate negotiators at Kyoto, noted that 'equity is the fundamental condition to ensure compliance of any international agreement' (Estrada-Oyuela 2002, 37).

Finally, norms and principles of fairness can help cement a collaborative equilibrium and reduce monitoring and enforcement costs through their impact on the domestic ratification process. Müller lays much emphasis on this point:

[A skeptic] might ... concede that equity has a role to play in the selection of initial allocation proposals. But surely, he is bound to interject, the *outcome* of the negotiations will be determined by good old-fashioned strategic bargaining, reflecting only the bargaining powers of the parties and the bargaining skills of the negotiators. ... [What the skeptic has overlooked is that] an agreement has to be implemented. This, in turn, requires political ratification which normally is beyond the power of mere negotiating agents.

....

It would be foolish to assume, however, that bodies such as the US Congress or the Indian Lok Sabha could be ... bullied into ratifying an agreement ... [because] parties may refuse to ratify an agreement if they feel it deviates unacceptably from what they perceive to be the just solution. (1999, 10–12)

A climate of mistrust

Finally, we argue that mistrust has proven to be a major obstacle to north-south cooperation, and that this obstacle is attributable to long-standing patterns of inequality and opportunism. Inequality makes it harder for developing countries and developed countries to trust each other and establish mutually acceptable

¹⁷ Developed and developing countries were ultimately able to find a 'middle way'—recognition that ozone depletion was a global problem requiring a global response, but that western nations had some level of responsibility to help late-developers comply with their emission reduction commitments (Sell 1996).

'rules of the game'. Such rules are important to would-be cooperators because they reduce uncertainty, stabilize expectations, constrain opportunism and increase the credibility of state commitments.

Although efforts to explore the causal impact of social trust in international environmental politics are virtually nonexistent, there is a large literature in economics, sociology and political science on the relationship between trust and cooperation (see Putnam 1993; Keohane 1984, 2001; Stein 1990; Kydd 2000). Beginning with the work of Émile Durkheim, researchers have demonstrated that by fostering norms of reciprocity, trust increases communication and information, reduces uncertainty and transaction costs, enhances the credibility of commitments, makes defection more costly, creates stable expectations and ultimately promotes cooperation (Durkheim 1933 [1893]; Putnam 1993). Trust, in effect, allows would-be cooperators to bank on promises to honour policy commitments. Putnam (1993), Knack and Keefer (1997), and Easterly (2001) and others have shown that social inequality is strongly associated with lower levels of trust, lower levels of public good provision (which is a proxy for cooperation), and higher levels of crime and other types of socially destructive behaviour.

However, there is some disagreement about how individuals, societies and nation states can best promote conditions of mutual trust. In many cases, reciprocity seems to be effective. Cicero famously said that '[t]here is no duty more indispensable than that of returning a kindness. All men distrust one forgetful of a benefit' (quoted in Putnam 1993, 172). However, as societies become more complex and information asymmetries increase, opportunities to shirk, cheat or otherwise commit malfeasance also increase, and conditions of reciprocity tend to break down. The solution to this problem in a domestic setting is simple. The creation of a state as an overarching coercive authority eliminates many perverse incentives 'by enabl[ing] its subjects to do what they cannot do on their own—trust each other' (Putnam 1993, 165). With its 'monopoly of violence', the state enforces contracts and 'coerces trust' on behalf of its citizens. However, in international relations, where contracting takes place under conditions of anarchy, states do not have the luxury of third-party enforcement (Waltz 1979; Keohane 1984; Oye 1986). They must 'decide whom to make agreements with, and on what terms, largely on the basis of their expectations about their partners' willingness and ability to keep their commitments' (Keohane 1984, 105). In the absence of a world government, rational states seeking stable and effective solutions to problems of international public good provision must develop so-called 'self-enforcing' agreements (Keohane 1984; Carraro and Siniscalco 1993; Barrett 2003).

As a result, a central question of international relations is how governments can convince potential partners that they will honour their commitments.¹⁸ We highlight three ways in which states may seek to enhance relations of trust among themselves: specific reciprocity, diffuse reciprocity and costly signals. Specific reciprocity is when countries 'exchange items of equivalent value in a strictly delimited sequence' (Keohane 1986, 4). For example, OPEC and non-OPEC

¹⁸ Mearsheimer and other 'structural realists' see 'little room for trust among states' because verifying others' promises is nearly impossible and conditions of anarchy breed constant fear (Mearsheimer 1994/1995, 11). Stein challenges this view. He argues that governments can achieve deep cooperation if they 'specify strict patterns of behavior and ensure no one cheats' (1990, 39).

nations periodically agree to cut oil production at the same time in order to maximize their impact on oil prices. However, this type of strategy has significant disadvantages. Unequal partners often find it difficult to reciprocate equally, contingencies may unexpectedly affect an actors' ability to reciprocate, and different interpretations and measurements can degenerate into situations of mutual recrimination. An accumulated stock of 'diffuse reciprocity' is much more valuable. Under circumstances where 'the definition of [equivalent value] is less precise, one's partners may be viewed as a group rather than as particular actors, and the sequence of events as less narrowly bounded' (Keohane 1986, 4); diffuse reciprocity does not require that all aspects of a contract be specified *ex ante*. Rather, it requires that states make deposits at the 'favour bank' when they can in order to build conditions of trust and stabilize expectations for future cooperative efforts (Putnam 2000, 20).

The need for diffuse reciprocity has been (indirectly) emphasized by climate policy-makers. Atiq Rahman has argued that '[t]he only way developing countries would feel comfortable getting into the system is through trust. ... Once this happens I think the ice will break' (quoted in Knight 1998). Former advisor to the Indonesian delegation Agus Sari also notes that the US decision to withdraw from Kyoto makes 'rebuilding the climate of trust ... imperative' (Sari 2003).¹⁹ Nevertheless, when interstate relationships are characterized by mutual suspicion and deep distrust, conditions of diffuse reciprocity can be very difficult to build. As a result, states actively seeking the trust of others often need to send 'costly signals' of reassurance to disinterested or resistant parties. Such signals 'serve to separate the trustworthy types from the untrustworthy types; trustworthy types will send them, untrustworthy types will find them too risky to send' (Kydd 2000, 326). This has special relevance to the field of international environmental politics. Western countries have a long history of cooperating across a wide range of policy areas and arriving at new self-enforcing contracts, but no such history exists between developed and developing countries. North-south environmental relations are characterized by high levels of mistrust and significant power asymmetries. Najam points out that:

[A]s a self-professed collective of the weak, the G-77 is inherently risk-averse and seeks to minimize its losses rather than to maximize its gains; ... [I]ts unity is based on a sense of shared vulnerability and a shared distrust of the prevailing world order ... [and] because of its self-perception of weakness [it] has very low expectations. (Najam 2004, 128)

Under these sorts of circumstances, the social trust literature suggests that *demandeurs* may need to strategically alter the payoff structures of their would-be cooperators such that voluntary participation becomes economically rational. They may also need to send special signals of reassurance that are discernible,

¹⁹Several years ago, Kevin Baumert and Nancy Kete brought scholars from the developed and developing world together through the Climate of Trust project to explore different climate policy options. They argue that '[d]espite North-South differences in emissions, wealth, and priorities, these disparities are not the largest barrier to cooperation. Probably a more potent obstacle is the enduring and growing lack of trust. Some industrialized countries have legitimate concerns that developing countries may never come into a climate protection regime or may commit only to limit their emissions at some remote future date' (2002, 10).

irrevocable, noncontingent and costly (Kydd 2000). For example, rich nations may devise compensation schemes or promote issue linkage to account for the competing policy priorities and high discount rates of developing countries (Sebenius 1983; Carraro and Siniscalco 1993).²⁰

Conclusion

We now return to the north-south impasse with which we began. The Kyoto Protocol requires emission reduction commitments from a group of countries that account for approximately 19 per cent of global carbon emissions. These countries are required to reduce their emissions by a little more than 5 per cent by 2012. It is therefore widely agreed that the current global climate regime will have almost no impact on atmospheric stability. At the same time, developing country emissions are expected to rise by 60 per cent by 2030. That is not to say that Kyoto has not been useful from a political perspective, but there is a growing consensus that the focus of the international community needs to shift towards the 'post-2012' era and the central task of encouraging active southern participation in a global climate regime.

Some climate policy analysts have argued that negotiators should soldier on and continue with the same kind of horse-trading tactics that have characterized the first 15 years of climate negotiations. Widening the scope of climate negotiations to include issues like inequality, trust and fairness, in this view, will be the millstone around the neck of any effort to stabilize the climate. Instead, it is thought that western governments should invest in clean technologies, delink economic growth for carbon emissions, strengthen compliance mechanisms and proceed with or without the participation of a majority of developing countries. One might call this the 'pragmatic justice' approach—the approach that says a perfectly fair agreement existing only in the minds of negotiators is in fact unfair to all parties. However, the 'pragmatic justice' approach overlooks the daunting scientific reality that the world is already on track to seriously destabilize the atmosphere by 2020 and the south's extreme risk aversion to binding emission limits.

We argue that breaking the north-south impasse on global climate policy will likely require unconventional—and perhaps even heterodox—policy interventions. To date, countries have proposed different yardsticks for measuring atmospheric clean-up responsibilities based on particularistic notions of justice. But high levels of inequality make it very unlikely that a north-south consensus will spontaneously emerge on the basis of a single fairness principle. Therefore, a moral compromise, or 'negotiated justice' settlement, will almost certainly be necessary. To break through the cycle of mistrust that plagues north-south relations, we also argue that the north needs to offer the south a new global bargain on environment and development and signal its commitment to this new 'shared thinking' through a series of confidence building measures. Drawing upon Andrew Kydd's research on US-Soviet relations in the run-up to the end of the Cold War, we argue that a series of costly signals—'signals designed to

²⁰ During global ozone negotiations, developing countries refused to cooperate with rich nations until the threat to trade sanctions was offset by positive incentives (Barrett 2003; Mitchell and Keilbach 2001).

persuade the other side that one is trustworthy by virtue of the fact that they are so costly that one would hesitate to send them if one were untrustworthy' (Kydd 2000, 326)—can foster mutual trust between countries that do not have a long history of cooperation. These measures should offer a new vision of global environmental cooperation, provide opportunities for developing countries to transition towards less carbon-intensive development pathways and clearly signal a desire to reverse long-standing patterns of global inequality. Finally, we emphasize the central importance of exercising self-restraint when the short-term payoff on opportunistic behaviour is high. When powerful states consistently treat weaker states like second-class citizens, they run the risk of weaker states 'reciprocating' in policy domains where they possess greater bargaining leverage.

Moving towards 'hybrid justice'

Earlier, we described four very different approaches to measuring national responsibility for greenhouse gas emissions: the grandfathering approach, which relies on entitlement principles of justice; the carbon intensity approach, which rests on utilitarian principles of justice; the historical responsibility approach, which operationalizes the 'polluter pays' principle; and the egalitarian per capita approach. These particularistic notions of justice are closely associated with where countries sit in the global hierarchy of economic and political power. It is therefore very unlikely that a north-south fairness consensus will spontaneously emerge on the basis of one of these principles. Instead, a moral compromise, or 'negotiated justice' settlement, will be necessary.²¹

In recent years, a number of proposals representing moral compromise have emerged. Bartsch and Müller (2000) propose a 'preference score' method, which combines the grandfathering and per capita approach through a voting system. Their proposal allows each country—weighted by their population—to choose the methodology that they prefer. Each global citizen's 'vote' is then used to calculate national carbon emission allowances. According to their preliminary model, under this proposal, roughly three-quarters of the global emissions budget would be based on the per capita approach and one-quarter on grandfathering. Others have focused on more politically feasible per capita proposals that provide for 'national circumstances', or allowance factors, like geography, climate, energy supply and domestic economic structure, as well as 'soft landing scenarios' (see Baumert and Kete 2002; Gupta and Bhandari 1999; Agarwal et al 1999; Ybema et al 2000; Ringus et al 2002; Torvanger and Ringius 2002; Torvanger and Godal 2004).

The Pew Center for Global Climate Change has developed a hybrid proposal that assigns responsibility based on past and present emissions, carbon intensity and countries' ability to pay (that is its per capita GDP) (Claussen and McNeilly 1998). It separates the world into three groups: those that 'must act now', those that 'could act now' and those that 'should act now, but differently'. The 'Triptych' proposal, designed by scholars at the University of Utrecht (and already used to

²¹ This point is increasingly recognized by scholars and policy-makers. Blanchard et al note that 'any future burden-sharing agreement involving developing countries will probably be based on a complex differentiation scheme combining different basic rules' (2003, 286).

differentiate commitments among EU countries), 'accounts for differences in national circumstances such as population size and growth, standard of living, economic structure and fuel mix in power generation' (Groenenberg et al 2001). Its novel contribution is that it divides each country's economy into three sectors: energy-intensive industry, power generation and the so-called domestic sector (transport, light industry, agriculture, and commercial sector). It applies the carbon intensity approach to the energy-intensive sector, 'decarbonization targets' to the power generation sector and a per capita approach to the 'domestic' sectors. Similarly, the multisector convergence approach, developed by two research institutes in northern Europe (ECN and CICERO), treats sectors differentially and integrates per capita, carbon intensity and ability to pay (GDP per capita) approaches (Sijm et al 2000).

EcoEquity.org has also created a 'Greenhouse Development Rights' framework as a reference to evaluate proposals for the post-2012 period (Baer et al 2007). They argue that countries below a 'global middle class' income of 9,000 USD per capita should be assured that they will not be asked to make binding limits until they approach that level; countries above that level should be responsible for rapid reductions of emissions and payments to assist those below the line in improving their social and economic status while adjusting to a less carbon-intensive path of development. We believe these hybrid proposals are among the most promising solutions to break the north-south stalemate.

Building trust through costly signals

We also argued that international climate negotiations are hobbled by the wider 'trust deficit' that plagues north-south environmental relations, and that a strategy of reassurance through costly signals can foster mutual trust between countries that do not have a long history of cooperation. In particular, we believe Kydd's (2000) research on US-Soviet relations during the 1980s offers important lessons for students of north-south environmental politics. He argues that the more noticeable, irreversible, unconditional and costly the signal from the sending state, the more trusting the receiving state will be and willing to engage in cooperative ventures.

[I]n looking at the end of the Cold War ... [we] can observe a series of costly signals leading to mutual trust between former adversaries. The attitudes of Western leaders, press, and publics toward the Soviet Union all underwent a substantial transformation. Soviet military and geopolitical concessions, particularly the [Intermediate-range Nuclear Forces] treaty, the withdrawal from Afghanistan, the December 1988 conventional arms initiative, and the withdrawal from Eastern Europe were decisive in changing overall Western opinion about the Soviet Union. By 1990 most observers viewed the Soviet Union as a state that had abandoned its hegemonic ambitions and could be trusted to abide by reasonably verified arms control agreements and play a constructive role in world politics. (350)

Importantly, this process of trust-building is usually an incremental and long-term strategy that involves sending a series of costly signals—and, in some cases, progressively more costly signals.

In a sense, the conditions of mistrust which currently plague north-south environmental relations can be understood as the product of a 'failed reassurance strategy'. In the early 1990s, the north assured poorer nations that they would

'take the lead' in stabilizing the climate (UNFCCC 1992, article 3.1). However, subsequent efforts have been sluggish, litigious, uneven and generally unimpressive. The lack of progress by the US and other industrialized nations in meeting their own emission reduction targets has provided developing nations a ready excuse for not making cuts. As Brazil's leading newspaper put it, 'Numbers like these [the US's emissions] reinforce the disposition of the Brazilian government to reject the idea of taking on additional costs to do its part in reducing the greenhouse effect' (Rossi 1997).

However, it is important to note that some trust-building efforts have proven successful in global environmental politics. The Multilateral Ozone Fund and the reformed Global Environmental Facility enshrined the 'compensatory justice' principle and gave developing countries a greater stake in the decision-making process governing the allocation of environmental aid (Woods 1999). The Montreal Protocol also gave developing countries a ten-year window to pursue 'cheap' economic development before making serious chlorofluorocarbon reductions. In the climate change arena, the way has begun to be paved with the three special funds set up at COP6 in Bonn and COP7 in Marrakesh to help developing countries adapt to the adverse effects of climate change, facilitate technology transfer and mitigate greenhouse gas emissions. Developed countries have also served themselves well by inviting developing countries to participate in the 'Compliance Committee' (without having to adopt scheduled emission reduction commitments) and treating them as equal partners through the double-majority voting mechanism.²²

Strategic restraint: the second prong of a trust-building strategy

Trust-building is of course not only about what you do, but also exercising strategic restraint. As we have argued elsewhere, one important way to demonstrate solidarity, empathy, kindness, friendship and loyalty to developing countries is to acknowledge and support their concerns and priorities in the international political economy arena. In fact, this could ultimately prove to be *more* important than international treaties, carbon accounting schemes or environmental aid. According to seasoned analyst Herman Ott, 'it became clear [at COP8 in New Delhi] that developing countries would not give up their "right" for increasing emissions without serious concessions in other fields of the development agenda which satisfy the demand for global equity and poverty reduction' (2004, 261).

Scholars of environmental politics unfamiliar with the international political economy literature may view such demands as distracting and unconstructive, but the ongoing development crisis is at the very heart of the climate policy gridlock. Developing countries want more 'policy space'—room to define and pursue their own development agenda—but contemporary international economic regimes present huge hurdles to export diversification, institutional experimentation and upward mobility in the world economy (Wade 2003).

²² A double majority voting system requires that two separate majorities be achieved—in this case, a majority of the wealthy, industrialized 'Annex I' countries and a majority of 'Non-Annex I' countries.

As such, if industrialized nations are interested in securing a north-south global climate agreement, we argue that they should consider explicitly signalling their concern for the 'structural obstacles' facing developing countries. For example, the current practice of tariff escalation reinforces the structuralist perception that rich countries do not want poor countries to get rich the same way they did. The TRIPS agreement has a similar effect since rich nations historically had complete policy autonomy in this area, granting patents at their own discretion in order to encourage industrial transformation (Shadlen 2004). Other possibilities include reigning in the 'deep integration' and anti-industrial policy crusade, not punishing poor countries for export diversification efforts, recognizing that the 'political losers' created by the diversification process must be somehow compensated and promoting predictability (and reducing opportunities for opportunism) in international economic regimes (Wade 2003; Birdsall et al 2005; Shadlen 2004).

Working towards a 'new shared thinking' about north-south environmental relations

Finally, we documented the existence of an enormous 'world-view gap' between rich and poor nations and argued that the 'structuralist' world-views and causal beliefs of developing countries will persist unless western governments make efforts to reverse this inequality. Yet, under circumstances of extreme mistrust, Kydd (2000) suggests that reluctant states may require more than costly signals and strategic reassurance. It may also be necessary for would-be cooperators to establish a 'shared world-view'. Kydd argues that this is typically the result of one state (or group of states) trying to get another state (or group of states) to buy into a so-called 'new thinking'. For example, during the Cold War, the US and Soviet administrations worked together to establish a 'new thinking' about global security. When the Soviet Union withdrew from Afghanistan, an editorial appeared in *The New York Times*, noting that its actions 'begin to render credible Moscow's "new thinking" about the Soviet role in the world' (quoted in Kydd 2000, 346). Subsequently, when 'asked if he still held to the idea that the Soviet Union was an evil empire ... [Reagan] responded, "No, I was talking about another time, another era."' (346).

Athanasiou and Baer suggest that, in the context of international climate negotiations, the greatest challenge is to ensure that the south 'not [view] climate justice as the justice of following the North down the fossil-fuel path' (2002, 83). Wheeler and Ummel similarly note that policy-makers need to be disabused of 'the notion that the South can utilize carbon-intensive growth to dramatically increase incomes—a kind of last-minute, fossil-fuelled development push—before the onset of catastrophic climate change' (2007, 9). But to move away from 'old North-South thinking', or what Graham calls 'residual 1970s thinking' (1996, 216), an attractive alternative must be offered. We argue that the north will need to aggressively assist developing countries in making the tough transition to more lower carbon pathways of development.²³ This is not merely a financing issue.

²³ Wheeler and Ummel echo this point: 'The North must ... [recognize] that its own survival requires an immediate, large-scale commitment to assisting emissions reductions in the South' (2007, 11). Also see Hicks et al (2008).

Countries on high-emission pathways will require serious attention to their political and class situations, as diversification is an intensely political process and conflict will inevitably arise. Developing countries will therefore need 'policy space' to pursue strategies tailored to local culture, knowledge, institutions and politics, while being provided significant technical assistance, technology transfer and aid.

To conclude, climate change is fundamentally an issue of inequality and its resolution will necessitate an unconventional policy approach. Climate negotiations, we must remember, take place in the context of an ongoing development crisis and what is perceived by the global south as a pattern of northern callousness and opportunism in matters of international political economy. They take place at a time when levels of generalized trust are declining. And they take place at a time when poor nations' concerns for fair processes and outcomes have frequently been marginalized. Negotiators must therefore explicitly and aggressively signal concern and seek to address the structural obstacles facing developing countries. We need a global and just transition built on diffuse reciprocity, a climate of trust, negotiated justice and a shared world-view.

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