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Abstract

This article seeks to answer why North–South climate negotiations have gone on for decades without producing any substantial results. To address this question, we revisit and seek to integrate insights from several disparate theories, including structuralism (new and old), world systems theory, rational choice institutionalism, and social constructivism. We argue that the lack of convergence on climate grew almost inevitably from our starkly unequal world, which has created and perpetuated highly divergent ways of thinking (worldviews and causal beliefs) and promoted particularistic notions of fairness (principled beliefs). We attempt to integrate structural insights about global inequality with the micro-motives of rational choice institutionalism. The structuralist insight that ‘unchecked inequality undermines cooperation’ suggests climate negotiations must be broadened to include a range of seemingly unrelated development issues such as trade, investment, debt, and intellectual property rights agreements. We conclude by reviewing the work of some ‘norm entrepreneurs’ bringing justice issues into climate negotiations and explore how these insights might influence ‘burden sharing’ discussions in the post-Kyoto world, where development is constrained by climate change.

Key words

climate justice ■ Copenhagen ■ inequality ■ institutionalism ■ Kyoto Protocol ■ social constructivism ■ structuralism ■ world systems theory

Introduction

THREE A.M. on 13 December 2008 marked the end of two weeks of acrimonious global climate change negotiations in Poznan, Poland, but even the exhaustion of the hour could not bring the world’s

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nations to agreement on several core issues dividing the global North and South. Senior Indian negotiator Pradipto Ghosh stood up to tell the weary delegates, ‘The world had immense hopes that the Poznan [negotiations] would send a clear signal . . . that would herald a new era in global co-operation. . . . But in the face of the unbearable human tragedy that we see unfolding every day, we have seen callousness, strategizing and obfuscation’ (Jebaraj, 2008).

At issue was how to structure the new Climate Change Adaptation Fund and whether to expand a levy on carbon credits generated by Clean Development Mechanism (CDM) projects, which allow industrialized countries to meet their commitments under the Kyoto Protocol by bankrolling emission-reducing activities in developing countries. The Fund currently generates roughly \$200–\$300 million a year based on the 2 percent levy, which is a tiny fraction (less than one-twentieth) of the total adaptation financing needed according to most objective assessments. The UNFCCC (2007) estimates that between \$28 and \$67 billion a year will be needed by 2030 to finance adaptation activities in the developing world. Oxfam puts the cost at \$50 billion a year (Green, 2008). The UNDP (2007) estimates that \$86 billion a year will be needed by 2015 to prevent ‘adaptation apartheid’. The 2010 *World Development Report* from the World Bank cites figures from \$28–\$100 billion per year by 2030, with a medium of \$75 billion a year.

In spite of increasingly dire warnings from scientists that cooperative action is urgently needed, nearly two decades have gone by with the human species producing only a very weak and partial agreement. The Kyoto Protocol makes only incremental demands of a small number of countries and excludes the majority of humanity from obligations entirely. This is because many of the world’s poorer nations have fought hard for their right to develop, including by burning cheap fossil fuels and converting forests into agricultural fields. The 2002 ‘Delhi Declaration’ most clearly articulates this core concern. Additionally, the United States and other carbon-intense ‘Umbrella Group’ countries like Australia and Canada continue to drag their feet on serious emission reduction commitments and earlier promises to pay for adaptation and mitigation efforts in the developing world. In the meantime, global emissions of climate-altering gases continue to soar, atmospheric levels rise, and sea levels creep up (IPCC, 2007; UNDP, 2007).

This article seeks to answer why North–South climate negotiations have gone on for decades without producing any substantial results. To address this question, we revisit and seek to integrate insights from several disparate theories, including structuralism (new and old), world systems theory, rational choice institutionalism, and social constructivism. Our point of departure is a simple one: that the absence of an effective North–South global climate agreement is closely linked to the failure of developing countries and several key industrialized countries to converge on a single fairness ‘focal point’ upon which a new treaty could be built. We argue that

this lack of convergence grew almost inevitably from our starkly unequal world, which has created and perpetuated highly divergent ways of thinking (worldviews and causal beliefs) and promoted particularistic notions of fairness (principled beliefs).

Understanding patterns of North–South environmental cooperation and non-cooperation, we argue, requires an analysis of *both* the proximate political factors and deeper social and historical determinants of state action.¹ Therefore, we attempt to integrate structural insights about global inequality with the micro-motives of rational choice institutionalism. Whereas institutionalists explain why states voluntarily create institutions that facilitate environmental cooperation, world-systems theorists address the underlying factors that condition a state's willingness and ability to participate in such arrangements. We also identify important complementarities between structuralism and social constructivism. Each of these traditions, in effect, speaks to a different link in the chain of causation.

In taking this synthetic approach, we hope to demonstrate a need for theoretical bridge-building in international environmental politics. Theoretical synthesis has figured prominently in the study of security (Snyder, 1991; Van Evera, 1990/1), human rights (Hawkins and Joachim, 2004), public health (Sell, 2003; Sell and Prakash, 2004) and development finance (Nielson et al., 2006), yet self-conscious attempts at bridge-building in international environmental politics are surprisingly rare.

Finally, the absence of a shared fairness focal point highlights the need for concrete 'climate justice' principles and policy proposals that will help rich and poor nations broker a mutually acceptable international agreement.² The structuralist insight that 'unchecked inequality undermines cooperation' suggests climate negotiations must be broadened to include a range of – seemingly unrelated – development issues. International economic regimes, including those for trade, investment, debt, and intellectual property rights, must be integrated with a future North–South global climate pact. A structuralist perspective also suggests that, at the national level, developing countries will need to carefully manage their participation in future markets in carbon offsets and emissions permits. We conclude by discussing how some key 'norm entrepreneurs' have brought justice issues into climate negotiations, and we reflect briefly on the role of 'insider-outsider' networks in shaping the policy discourse.

In Part I of this article we review the central theoretical traditions of international relations and their relevance to ongoing North–South climate negotiations. We then draw on structuralist insights in two ways. First, we analyze roots of the impasse in North–South climate negotiations using global inequality as our theoretical point of departure. We also briefly review a new literature on 'ecologically unequal exchange' and explore how it has influenced ongoing climate negotiations. Building on structuralist perspectives of the world economy, a small but growing group of researchers have empirically documented that energy and material flows disproportionately from the global South to the North. These findings have, in turn, begun to

influence the policy-making process. Since the extraction of resources and energy are some of the most damaging stages of the chain of commodity production, developing countries have increasingly taken the position that they are owed an ‘ecological debt’ by the North. China and the Group of 77 (a group of 130 developing countries), in particular, have seized on the ideas of ‘ecological debt’ and ‘ecologically unequal exchange’, and a movement for ‘climate justice’ is gaining strength in and beginning to exert influence in negotiating fora such as the UNFCCC meetings in Delhi, Bali, Poznan, and Copenhagen.

In Part II of this article we apply insights from the old structuralism and more recent work on ‘norm entrepreneurs’ and transnational social movements to look forward. The original structuralist school of thought was a splinter from dependency theory, which took a view of the history of development in regions like Latin America and noted that the greatest advances were made in times like the Great Depression and the World Wars, when developing countries were economically quite isolated and produced goods for their own consumption. Radical ‘*dependentistas*’ argued for near complete separation from the global economy, which they saw as inevitably driving positions of subordination for developing nations. Structuralists, by contrast, argued that developing nations needed to very strategically maneuver themselves with selective state involvement in the economy, and through strategic ‘insertion’ in the global economy (Cardoso and Faletto, 1979; Rosales, 1988; Gwynne and Kay, 2004; Leiva, 2008). We conclude by exploring how these insights might inform national efforts to achieve truly sustainable development and influence ‘burden sharing’ discussions post-Kyoto where development is constrained by climate change.

Part I: Synthesizing Existing Theories

The central theoretical traditions of international relations offer different explanations for why some countries seek to forge and actively participate in international environmental agreements while others ignore, actively resist, or undermine international efforts to protect the global environment. We briefly review their core insights and predictions and then turn our attention to structuralism and world systems theory and its relevance to North–South environmental negotiations. One of our central objectives in this article is to demonstrate that structuralist insights can be fruitfully integrated with mainstream theories of international relations. In particular, we will seek to integrate insights from structuralism, world systems theory, rational choice institutionalism, and social constructivism in order to explain why inequality is a central impediment to international efforts to stabilize the climate and what can be done about it. We argue that inequality dampens cooperative efforts by reinforcing ‘structuralist’ worldviews and causal beliefs, polarizing policy preferences, promoting particularistic notions of fairness, generating divergent and unstable expectations about future behavior, eroding conditions of mutual trust, and creating incentives for zero-sum and negative-sum behavior. Inequality, in effect, undermines

countries' ability to establish mutually acceptable 'rules of the game', which reduce uncertainty, stabilize expectations, constrain opportunism, and increase the credibility of state commitments. As such, efforts to 'ring-fence' climate negotiations from ongoing debates about developing country participation in international economic regimes (e.g. trade, investment, debt, intellectual property rights) are unlikely to succeed.

Constructivists offer a constitutive model of international relations in which global environmental 'culture' gradually envelopes more and more states in a world institutional structure. They argue that for over a century the global norm of environmentalism has steadily and broadly spread among rich and poor nations (Meyer et al., 1997; Frank, 1999). These common global values have in turn created a social system that subsumes the traditional international political world. Therefore, as a growing global network of scientists in International Councils for Science (ICSUs) and International Nongovernmental Organizations (INGOs) disseminate their global environmental ideas and values, states seek to gain and keep legitimacy in this evolving cultural 'club' by participating in international environmental agreements.³ Constructivists also draw attention to the agency of individuals and organizations to engage in 'strategic social construction' – that is, define and redefine issues, thereby influencing the preferences and behavior of states (Finnemore and Sikkink, 1998; Acharya, 2004). We discuss this idea of 'norm entrepreneurs' at greater length below.

Realists, by contrast, argue that international 'regime-building' is mostly talk, obscuring the deeper agendas of states to build and secure power. International treaties and institutions are viewed as epiphenomena that states will contravene when they no longer perceive benefits to continued participation. While the sharp increase and growing importance of voluntary international cooperation after the Second World War is difficult to deny, realists insist that a power-based explanation still retains the most analytical purchase over the study of international environmental politics. Young (1989) and DeSombre (2000), for example, highlight a number of cases where powerful states have imposed international environmental regimes on otherwise disinterested states. Realists predict that powerful states – or coalitions of powerful states – will coerce countries (with the potential to deliver global and/or regional environmental benefits) into cooperative ventures when it helps them maximize relative gains.

As a response to the perceived shortcomings of realism, rational choice institutionalists have made it their central preoccupation to explain the flowering of voluntary international cooperation. Faced with the spread of international law, institutions, and organizations, scholars from this camp have offered a functional explanation for the creation, maintenance, and implementation of international regimes. Specifically, they posit that under conditions of interdependence, uncertainty, and high transaction costs, states actually need institutions (or regimes – the terms are used interchangeably here) to facilitate cooperation (Keohane, 1984; Haas et al., 1993). By increasing transparency and providing reliable information,

monitoring and verifying state behavior, assisting implementation, and sanctioning non-compliance, institutions help states to move away from pursuing relative gains – where ‘my gain is your loss’ – toward positive-sum outcomes. In short, institutions help states overcome collective action problems and promote their shared interests in a shifting and complex world.

Yet, the prospects for international cooperation fundamentally depend upon the credibility of state commitments. If a state’s willingness or ability to honor an international environmental policy commitment is weak, or even in question, institutionalists argue that cooperation is unlikely. However, state preferences and underlying worldviews and beliefs are typically exogenous to rationalist models of international cooperation. State preferences must therefore be ‘filled in’ by the specific assumptions of other (complementary) theories (Hawkins et al., 2006: 7). We argue that insights from the structuralist and world systems theory literature provide a way of endogenizing these critically important but poorly understood variables.⁴ Whereas institutionalists explain why states voluntarily create institutions that facilitate environmental cooperation, world-systems theorists address the underlying factors that condition a state’s willingness and ability to participate in such arrangements.

In this article, we seek to build on our prior work by trying to better understand (a) the extent to which divergent national preferences are rooted in divergent worldviews, causal beliefs, and principled beliefs, and (b) whether Southern worldviews, causal beliefs, and principled beliefs regarding global environmental issues are linked to observable empirical regularities (Roberts and Parks, 2007). The extant literature suggests that material and ideational preferences exert an influence on a nation’s negotiating position, but without understanding the origin of those preferences, it is hard to say how stable they are or under what conditions they might shift.

We find that in many cases Southern worldviews and causal beliefs cannot be dismissed as a false construct or an erroneous mental model, used to justify poor performance. A case in point is the increasingly popular Southern causal belief that poor nations interact with rich nations on the basis of ‘ecologically unequal exchange’. The evidence suggests that by almost any measure, ecologically unequal exchange is not just a perception; it is a social reality. Emissions are increasing sharply in developing countries as wealthy nations ‘offshore’ the energy-, natural resource- and pollution-intensive stages of production. As such, efforts to forge an effective North–South climate pact will likely require acknowledgement of the phenomenon and significant efforts to address it.

Structuralist, Neo-structuralist, and Dependency Theories: Why They Matter for Global Climate Policy

With the creation of the World Bank and the IMF after the Second World War and increased attention to ‘development’ around the world, many political leaders and economists from wealthy, industrialized countries urged

poorer countries to open their borders to free trade and imitate and import the culture, technology and business practices of the global North. During the Kennedy and Johnson administrations in the US, academics like Walt Whitman Rostow made the case that doing so would create the conditions for economic ‘take-off’ and late-developers would follow a similar path to the one experienced by the United States and Europe.⁵ However, Latin American scholars noticed that Rostow’s theory did not comport with the experience of many countries in the region: countries grew and became more economically diverse during their relative *isolation* during the global depression in the 1930s and the Second World War, but appeared to weaken during times of increased foreign investment and trade. A group of economists working in Santiago, Chile, under the leadership of Raul Prebisch in the Economic Commission for Latin America developed a theory to explain this phenomenon. They argued that during the years before the Great Depression, the influx of investment and cheap goods from Europe and the US had placed smaller local producers at a competitive disadvantage and created ‘dependent’ economies which could only grow to a certain point, without creating the jobs or revenues needed to become a dynamic, resilient system. By comparison, the isolation of the Depression and the Great War seemed to actually create new opportunities for local industries to flourish.⁶ Thus, structuralist observers saw the development of Latin American economies hindered by external forces – the ‘structure’ of the world economy.

Prebisch, the ECLA authors, and those who followed them believed that there were ‘core’ and ‘peripheral’ areas of the world economy. Power and high-value goods flowed out of the core nations, while low-value goods flowed from the periphery up to these ‘centers’. From the outset, these theorists were of two types: the ‘structuralists’ and the ‘dependency theorists’. The former group argued that the global economy created opportunities for and limitations on their growth, and that very strategic decisions would be required to navigate a path towards national development. The latter group basically saw no way for their development to occur without their nearly complete withdrawal from global markets.⁷ Perhaps most famously, Brazilian sociologist Fernando Henrique Cardoso, who was elected that nation’s president in the 1990s, was among the former group. Andre Gunder Frank, Paul Baran, and Paul Sweezy were among the latter.

During the 1960s and 1970s, the main ideas of structuralism were incorporated into a new materialist Marxian school called world-systems theory. Sociologist Immanuel Wallerstein added a third category of nations between Prebisch’s core and the periphery that had features of both, which he called the semi-periphery. These nations also did the work of exploiting their neighbors and internal peripheries, serving as global ‘middlemen’ or, more aptly, ‘foremen’. Critics charge that neither dependency nor world-system theorists account for upward mobility of some nations; however, this is not entirely true. World-system theorists have always argued that while mobility is possible and indeed expected, the structure of global inequality

remains largely intact over time (e.g. Chase-Dunn, 1989).

In terms of understanding the climate policy positions of developing countries, world-systems theory provides several useful contributions. First, a country's 'insertion' into the world economy remains critically important even after all this time. As we argue at greater length below, the structural obstacles that developing countries face have significantly influenced their worldviews, causal beliefs, and principled beliefs, which have in turn shaped their perceived self-interests, policy positions, and negotiating tactics.⁸ Understanding the origin of these structuralist ideas can therefore illuminate the types of policies that have the best chance of enlisting the support of developing countries in a post-2012 global climate regime. For example, we argue that one of the most important ways in which wealthy, industrialized countries could build the conditions of mutual trust and diffuse reciprocity that are necessary to support long-term cooperation with developing countries would be to aggressively support Southern interests within international economic regimes.⁹

The emphasis of world-systems theory on historicism and structuralism also helps explain why many peripheral and semi-peripheral nations are currently locked into ecologically unsustainable patterns (Roberts and Grimes, 1999; Roberts et al., 2003). World-systems theorists argue that the volatility and periodic collapse of export commodity prices encourage poor nations to ramp up the extraction and sale of material goods that they are already selling at a near loss. As we describe at greater length below and Giljum (2004) nicely summarizes:

low prices for primary commodities allow industrialized countries of the capitalist core to appropriate high amounts of biophysical resources from the peripheral economies in the South, while maintaining external trade relations balanced in monetary terms. . . . [W]hat within the system of prices appears as reciprocal and fair exchange masks a biophysical inequality of exchange in which one of the partners has little choice but to exploit and possibly exhaust his natural resources and utilize his environment as a waste dump, while the other partner may maintain high environmental quality within its own borders.¹⁰

This particular insight from world-systems theory is significant because a growing number of developing countries have called for a recognition of (and/or remuneration for) a so-called 'ecological debt' that the North owes the South. While developed country negotiators often dismiss this type of 'rhetoric' as distracting and unconstructive, world-systems theory helps to explain the empirical origin of this concept and the types of policy measures that may be necessary to address the core concerns of the global South.

The Origins of the 'Ecologically Unequal Exchange' Concept

Scholars and politicians have long argued that the world's wealthier nations are gradually 'dematerializing' their economies as people become 'post-consumerist', or post-modern, in their consumption patterns. That is,

citizens of the global North increasingly value consumption of services and experiences over material products (Adriaanse et al., 1997; Inglehart, 1990; Ruth, 1998). Ecological modernization theory developed in northern Europe to explain how some key capitalist firms appeared to be incorporating environmental consideration into their decision-making (Mol, 1995; Mol and Spaargaren, 2002). These trends have prompted many observers to argue that economic growth is decoupling from resource consumption. While a declining material intensity of GDP does not necessarily translate into lower levels of absolute resource consumption, this ‘dematerialization’ trend continues to be celebrated as a great environmental victory (Giljum and Eisenmenger, 2004). This claim is tied to another closely related assertion made by World Bank and WTO analysts: that exports from Third World nations are continually being upgraded and are increasing poor nations’ prospects for positive economic growth and development (World Bank, 1992; Bhagwati, 2004).

However, both of these arguments have recently come under attack by an interdisciplinary group of researchers forging a new literature on ‘ecologically unequal exchange’ (Andersson and Lindroth, 2001; Cabeza-Gutés and Martínez-Alier, 2001; Damian and Graz, 2001; Giljum, 2003, 2004; Giljum and Eisenmenger, 2004; Giljum and Hubacek, 2001; Heil and Selden, 2001; Hornborg, 1998a, 1998b, 2001; Machado et al., 2001; Martínez-Alier, 2003; Muradian and Martínez-Alier, 2001a, 2001b; Muradian and O’Connor, 2001; Muradian et al., 2002; Russi and Muradian, 2003). The central empirical findings from this literature suggest that when nations exchange goods, the market prices of primary products are often undervalued, and in the course of extracting, moving, and processing products for export there is a massive transfer and degradation of materials and energy that goes unnoticed (Rice, 2007; Jorgenson, 2009). As a result, trade relations between rich and poor nations remain highly unbalanced because less developed countries export large quantities of under-priced products whose value does not include the environmental (and social) costs of their extraction, processing, or shipping.

Using a ‘materials flow’ accounting methodology, some ecological economists argue that physical numeraires can be used to bring these flows of material and energy back into the equation. The most straightforward way to do so is by measuring the physical weight of import and export flows. However, more sophisticated methodologies are also being developed to account for indirect material flows used in the production process and as waste and emission flows (Giljum, 2004; Machado et al., 2001; Muradian et al., 2002).

Researchers that employ this type of analysis have uncovered an important finding: many developing countries traditionally seen as successful, export-oriented economies are actually suffering huge, unrecorded (economic and ecological) losses (Giljum, 2004; Machado et al., 2001; Muradian et al., 2002). Using time series natural resource consumption data, Giljum (2004) finds that Chile’s natural resource exports have

increased threefold and its use of material inputs has increased by a factor of six over the period 1973–2000. Giljum also identifies a link between this pattern and huge export drives in the forestry, fishing, mining, and fruit-growing sectors. In a similar study, Muradian and Martinez-Alier (2001b) document developing country responses to declining terms of trade and find that falling prices tend to correlate with large export drives for primary products. Of the 18 natural resource exports from developing countries included in their study, all but two saw their prices fall between the 1970s and 1990s, yet 14 of the 18 exports increased dramatically in volume over the same period in physical terms.

Tracking material and energy flows from extraction to production to final disposal is particularly illuminating. The most systematic and comprehensive empirical study employing this approach examines the EU-15 region and concludes that, while the EU maintains balanced external trade relations in monetary terms with all other major regions of the world, it runs an enormous trade deficit in physical terms (Bringezu and Schutz, 2001). Primarily due to the import of fossil fuels, semi-manufactured products, and abiotic raw materials, the EU imports more than four times what it exports in physical terms. Yet, ‘EU-15 exports have a money value of 4 times that of imports. With regard to trade relations with Southern regions such as Africa and Latin America, one ton of EU exports embodies a money value 10 times higher than one ton of EU imports’ (Giljum and Eisenmenger, 2004: 84).

Thus, from both an import and export perspective, materials flow analysis suggests that core economies are in effect draining ecological capacity from extractive regions by importing resource-intensive products and shifting environmental burdens to the South through the export of waste (Andersson and Lindroth, 2001).¹¹ In this regard, materials flow analysis has cast serious doubt on earlier claims that we have entered an era of dematerialization (Rice, 2007; Jorgenson, 2009). In fact, what appears to be happening is that some core economies are being ‘relatively dematerialized’ as they export to poor countries, or ‘peripheralize’, the material-intensive stages of the production process. Domestic production has certainly become more efficient – if one defines efficiency as the material intensity of a country’s own production – in the core zones of the world economy. However, nations that increasingly import the material-intensive goods required by their lifestyles are clearly no less materialist and no more sustainable than they were when they bore their own environmental burdens (Fischer-Kowalski and Amman, 2001).¹²

Global climate change is also an important area in which ecologically unequal exchange appears to be in effect. Recent statistical research suggests that participation in international trade increases emissions in poorer countries, but lowers them in wealthier countries (Heil and Selden, 2001; Roberts and Parks, 2007). Additionally, Machado et al. (2001) and Muradian et al. (2002) find that ‘service-exporting’ OECD countries, which increasingly specialize in areas like banking, tourism, advertising, sales, product design, procurement and distribution, are in many cases

‘net-importers’ of carbon-intensive goods coming primarily from developing countries.¹³ Therefore, while national CO₂ emissions data may suggest a shift towards relatively low-carbon lifestyles and economies, such countries are not necessarily emitting any less; they may simply be displacing their emissions – e.g. ‘offshoring’ the production of their energy-intensive products to developing countries.

These findings have led to the logical but radical claim that the wealthier nations owe some kind of remuneration (an ‘ecological debt’) to poorer nations for the environmental damage ‘embodied’ in their energy- and material-intensive products (Machado et al., 2001; Muradian et al., 2002; Princen et al., 2002). In late 2001, scholars and activists from the global South met in the African nation of Benin to articulate a position on the ‘ecological debt’ (a close cousin of the ecologically unequal exchange idea). The argument, as originally developed by Spanish economist Joan Martínez-Alier and the Ecuadorian environmental group Acción Ecológica, is that wealthy nations have been running up a huge debt over centuries of exploiting the raw materials and ecosystems of poor nations (Martínez-Alier, 2003; Simms et al., 2004; Acción Ecológica, 2003). The debt includes the historical and modern exploitation of non-Western natural resources and the excessive use of ‘environmental space’ for dumping waste (e.g. the expropriation of global atmospheric resources). An extraordinary coalition of environmental, human rights, and development NGOs has lobbied for the ecological debt to either be paid or used as balance to forgive national economic debts (Simms et al., 2004).¹⁴

A growing number of governments in the developing world have also begun to espouse the position that the North owes the South an ‘ecological debt’ (Roberts and Parks, 2007). In 2000, the Chinese government and the G-77 declared at their ‘South Summit’ that ‘We believe that the prevailing modes of production and consumption in the industrialized world are unsustainable and should be changed for they threaten the very survival of the planet. . . . We advocate a solution for the serious global, regional, and local environmental problems facing humanity, *based on the recognition of the North’s ecological debt* and the principle of common but differentiated responsibilities of the developed and developing countries’ (G-77 2000, emphasis added). More recently, China’s Minister of Foreign Affairs, Yang Jiechi, has stated that many of China’s carbon emissions are in fact the by-product of Northern demand for manufactured goods, noting ‘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).

Understanding how global inequality influences international efforts to forge a climate agreement: the need for theoretical synthesis

Having reviewed some of the core tenets of world-systems theory and some of its ecological implications, we now explore the possibility of theoretical synthesis in order to better understand the current impasse in North–South

climate negotiations and what can be done to address it. Understanding North–South environmental negotiations, we believe, requires an analysis of both the proximate political factors and deeper social and historical determinants of state action. As a result, we see a clear need for theoretically-sequenced models of state behavior that seek to integrate structural insights from world-systems theory with the micro-motives of rational choice institutionalism. Each of these theories has strengths and weaknesses. While institutionalists try to explain why states voluntarily create – or choose not to create – institutions that facilitate environmental cooperation, world-systems theorists address the underlying factors that condition a state’s willingness and ability to participate in such arrangements. Each of these traditions, in effect, speaks to a different link in the chain of causation.

As a theoretical point of departure, structuralists and world-systems theorists begin with global inequality. They argue that nations can move up and down the international division of labor, but the inherently unequal structure of the world system largely remains in place due to structural barriers: unstable commodity prices, declining terms of trade, domestic political unrest, high levels of social inequality, and feeble post-colonial political institutions. We argue that persistent global inequality is a useful starting point because it directs our attention to the *root causes* of political conflict in international environmental relations. Because global inequality promotes a social distribution of economic benefits and environmental burdens that advantages rich countries and disadvantages poor countries, it also creates political conflicts of an intrinsically *structural* nature (Krasner, 1985).

Worldviews and causal beliefs: As we have argued elsewhere, the persistence of North–South inequality promotes distinctly *structuralist* worldviews and causal beliefs (Roberts and Parks, 2007). Goldstein and Keohane define worldviews 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 worldview implies ‘[limited] choice because it logically excludes other interpretations of reality, or at least suggests that such interpretations are not worthy of sustained exploration’ (Goldstein and Keohane, 1993: 12). By limiting one’s menu of available options, worldviews and causal beliefs have an instrumental impact on how cost-benefit calculations are conducted.¹⁵ 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 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 (Abbott and Snidal, 2000; Gruber, 2000; Shadlen, 2004). Leaders who feel cheated by others may seek to punish their enemies or strengthen their relative power, regardless of the efficiency implications (Najam, 2004). 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). Worldviews 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, ‘structuralist’ ideas about the origins and persistence of global inequality form the central worldview of most developing country leaders, including how they have viewed the issue of climate change (Williams, 1997; Najam, 2004; Roberts and Parks, 2007). The vast majority of goals developing country leaders have sought since the end of the Second World War have remained elusive, and this has shaped developing countries’ perceptions of the world as fundamentally unequal and unjust. Twenty-five years ago, Krasner argued that ideas about ‘dependency’ affected how many Southern 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,’ he noted, ‘[is] not merely a rationalization. It [is] the subjective complement to the objective condition of domestic and international weakness’ (Krasner, 1985: 90). Almost 20 years later, Najam (2004: 226) described the perspective of developing country leaders this way: ‘The 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.’

There are several widely-held structuralist ideas related to international environmental issues, which we would argue obstruct North–South efforts to protect the climate: the idea that global environmental problems are largely 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 labor, and the idea that the North is using environmental issues as a ruse to thwart poor countries’ economic development (Roberts and Parks, 2007).¹⁶ These beliefs can be seen in both the terminology and the arguments made by developing countries. Although wealthy, industrialized countries often dismiss claims of ‘environmental imperialism’, ‘ecological debt’, ‘ecologically unequal exchange’, and ‘environmental load displacement’ as empty and distracting rhetoric, the fact of the matter is that Southern governments view their interests according to their worldviews and causal beliefs and this appears to be impeding international environmental cooperation. As we describe in greater detail below, the ‘structuralist’ way of making sense of the world has led to divergent and unstable expectations about future behavior. Structuralist ideas have also promoted particularistic notions of

fairness, a victim mentality and, in some cases, zero-sum or negative-sum behavior.

Principled beliefs: Global inequality also influences the prospects for North–South cooperation through its impact on ‘principled beliefs’. Goldstein and Keohane define principled beliefs as ‘normative ideas that specify criteria for distinguishing right from wrong and just from unjust’ (Goldstein and Keohane, 1993: 9). Such ideas can facilitate cooperation if they are widely shared by providing a so-called ‘focal point’ that reduces the costs of negotiating and bargaining, making agreements more palatable to domestic audiences (who frequently possess an indirect veto power over ratification and implementation), and realigning the incentives of rich and poor nations to create fewer opportunities for shirking, defection, and other types of opportunistic behavior (Wiegandt, 2001; Roberts and Parks, 2007).

First, fairness principles can reduce the costs associated with negotiating international agreements. 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 non-cooperative outcome, states can stabilize expectations for future behavior and reduce the costs of arriving at a mutually acceptable agreement (Müller, 1999; Keohane, 2001). 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 (DeSombre and Kauffman, 1996; Sell, 1996), but all parties eventually agreed to allow the principle of ‘compensatory justice’ to guide the negotiations (Albin, 2001; Barrett, 2003).

Fairness principles can also influence the costs of monitoring and enforcing agreements. Due to the public good attributes of a stable climate (i.e. non-excludability and non-rivalry) and the fact that asymmetric information reduces the ‘observability’ of deviant behavior, states may face strong incentives to free ride on the climate stabilization efforts of others. In a sense, it is in every state’s self-interest to misrepresent their level of contribution to the collective good. Demandeurs must therefore make compliance economically rational for more reluctant participants through financial compensation schemes, issue linkage, and other forms of incentive restructuring, which can weaken incentives for cheating and defection (Krasner, 1985; Young, 1994; Abbott and Snidal, 2000).¹⁷

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 (1999: 10–12) lays much emphasis on this point: ‘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.’

However, norms of fairness are extremely elastic and subject to political manipulation, and fairness focal points rarely emerge spontaneously. In many cases, countries hold genuinely different perceptions of fairness because of the highly disparate positions that countries occupy in the global hierarchy of economic and political power. Some poor nations, for example, believe that they are unjustly suffering the consequences of the North's profligate consumption. Others believe that they are entitled to pursue 'cheap' economic growth using fossil fuels and other natural resources at hand, since now-wealthy countries did the same at their early stages of development. Several rich nations, by contrast, argue that a climate agreement excluding developing countries is unfair and meaningless since 'non-Annex I' emissions will increase exponentially over the next few decades. Some rich nations have suggested that if they continue to bear the weight of sustaining global economic growth and international financial stability, it would be both unfair and unrealistic to expect them to make sharp and immediate reductions in their carbon emissions.

Small island states take an entirely different view; they believe that a fair agreement would immediately stabilize the climate, forestall the complete destruction of island nations and cultures, and address their basic economic needs and extraordinary vulnerability to climate-related stress and hydro-meteorological disasters. Nations in cold locations, with higher heating bills, and countries with large land areas have also argued that their special 'national circumstances' – which predispose them towards higher emissions levels from transportation of goods and people – must be taken into consideration in crafting a fair deal for all nations. In short, we live in a morally ambiguous world where social understandings of fairness are 'configurational', depending on countries' position in the global hierarchy of economic and political structure.

Part II: From Theoretical Synthesis to Action: Climate Justice 'Norm Entrepreneurs' and Structuralist Policy Proposals

Rational choice institutionalism, which we have drawn upon extensively in our discussion of the importance of worldviews, causal beliefs, and principled beliefs, seeks to explain the proximate political determinants of international environmental cooperation, but leaves unanswered the deeper questions of how states came to occupy specific positions in the global division of labor in the first place. Theories are of course only as useful as that which they attempt to explain, and rational choice institutionalism only sheds light on interstate managerial problems. This type of managerial approach provides 'solutions' to particular environmental problems, but does not address the underlying role that existing social structures play in shaping (a) the global distribution of both 'goods' (e.g. wealth) and 'bads' (e.g. pollution) between countries, and (b) the worldviews, causal beliefs, principled beliefs, and negotiating strategies of political leaders in those countries. Very simply, solving international environmental problems is not

just a matter of engineering efficient institutions; it also requires an understanding of why asymmetric distributions exist and what can be done to mitigate their impact on countries' willingness and ability to engage in cooperative arrangements. As Vogler and Imber (1996: 16) put it, we need to avoid applying 'an institutional bandage . . . to a structural hemorrhage'. Structuralist theories can therefore play a useful role by illuminating the underlying factors that shape worldviews, causal beliefs, principled beliefs, and perceived interests, and suggesting the types of measures that have the best chance of addressing the core concerns of Southern policy-makers.

At the same time, someone needs to turn these types of ideas into policy proposals, and if environmental and social justice advocacy group do not, international negotiators may do so with a different set of priorities in mind. Who sets the tone? Who defines the 'salient' issues? Who identifies and scrutinizes the merits and shortcomings of competing policy proposals? Okereke (2008) argues that the viability and adoption of specific equity norms in global environmental regimes depend on three primary factors: the 'source' of the norms and the 'force of articulation', the nature of the issue-area, and the 'moral temper' of the international community. The 'source' refers to the individual or group promoting the use or institutionalization of a particular norm; constructivists often refer to these agents as 'norm entrepreneurs'. The successful adoption of specific equity norms is also closely related to 'the stature of the norm advocates and the force or style with which the norms are presented' (Okereke, 2008: 34). Additionally, the nature of the issue-area is important. Sometimes it is relatively easy to establish causality or responsibility for an environmental problem; other times it is not.

The specific features of an environmental challenge may also provide certain countries – or groups of countries – with significant bargaining power. DeSombre and Kaufmann (1996) note that China and India were able to successfully integrate the 'common but differentiated responsibilities' and 'compensatory justice' principles into the global ozone regime because of the substantial bargaining power they possessed vis-à-vis developed countries.¹⁸

Finally, the uptake of specific equity norms depends on the 'moral temper' of the international community' or the 'extent to which the international community, as a society, is attuned to moral propositions within a particular socio-political time frame' (Okereke, 2008: 39). Mansbach and Ferguson (1986) argue that 'normative emphases' evolve over time based on factors such as prevailing global economic conditions, the intensity of military conflict, scientific and technological advances, and the rise and decline of specific social, ideological, religious, and spiritual movements.

Here we focus primarily on the role of transnational NGO coalitions and 'insider-outsider networks' as norm entrepreneurs. This literature is relevant to those who would like to see the global North and South forge a mutually acceptable global climate pact because it highlights the role that such agents can play in facilitating major policy change within international

regimes. For example, during the mid-1990s, a group of NGOs forged a powerful coalition with the World Health Organization, the United Nations Development Program, the World Bank, and a number of large developing countries, and effectively changed the nature of discussion on intellectual property rights and anti-retroviral patents from a ‘piracy issue’ to a ‘human rights issue’. As norm entrepreneurs, civil society groups characterized pharmaceutical companies as greedy capitalists depriving HIV/AIDS victims of basic medical treatments. They also revealed inconsistencies in rich country policies, which put greater domestic pressure on elected officials in the West. As Sell and Prakash (2004: 165) explain:

NGOs argued that if the United States was presumably willing to engage in compulsory licensing to address a national emergency, how could it possibly deny that same prerogative to developing countries daily facing thousands of preventable deaths (a national health emergency by any standard)? [And] if the U.S. had, by threatening compulsory licensing, achieved deep discounts in drug prices, why was it punishing Brazil for adopting the same strategy?

NGOs have also catalyzed reform within the international debt regime that was once inconceivable. By changing the discourse from an economic issue to a moral and religious issue and forging strategic partnerships with key ‘insiders’ at the US Treasury, the US Congress, the White House, the World Bank, and the IMF, a relatively small number of NGOs significantly increased the size and scope of debt relief, changed the rules of the debt regime, re-defined the purpose of debt relief, and ensured that the funds freed up by debt relief would be directed to poverty reduction programs (Callaghy, 2004).

While it is far from clear that transnational NGO coalitions or ‘insider-outsider’ networks will have a similar policy impact on the post-2012 global climate regime, there are some preliminary signs of bridge-building around the issues of ‘climate justice’, ‘ecological debt’ and even ‘contraction and convergence’ to a per capita allocation of atmospheric rights. The G-77 and a coalition of more than 30 Western NGOs, policy institutes, and think tanks (many of whom were instrumental in changing the international debt regime) have begun to more aggressively push for some remuneration of the ‘ecological debt’.¹⁹

The UNDP dedicated the 2007/8 edition of its flagship *Human Development Report* (HDR) publication to global climate change and focused extensively on issues of equity and justice. At the outset of the report entitled *Fighting Climate Change: Human Solidarity in a Divided World*, the authors state that climate change ‘raises profoundly important questions about social justice, equity and human rights across countries and generations’ (UNDP, 2007: 22). They also highlighted the importance of the ‘very large “carbon debt” that the rich countries owe the world’ and argued forcefully that ‘[r]epayment of that debt and recognition of human development imperatives demand that rich countries cut emissions more deeply and

support low-carbon transitions in the developing world' (UNDP, 2007: 50). Kevin Watkins, the lead author director of the team which assembled the 2007/8 HDR, was previously the Director of Oxfam's Policy Department. As an 'insider' at UNDP, Watkins has 'imported' some of the key ideas being promoted by outside groups interested in social and environmental justice, such as Oxfam, the Rising Tide Network, and the International Institute for Environment and Development.²⁰

Initial bridge-building efforts appear to have had some effect. Key insiders, such as UK Prime Minister Gordon Brown and former World Bank President James Wolfensohn, have signaled support for 'climate justice' and payment of the 'ecological debt'.²¹ Recently, the UK's environment agency (DEFRA) also tacitly acknowledged the 'ecologically unequal exchange' phenomenon, admitting that the nation's carbon emissions had declined only if one excludes imports from China. Herman Ott, a seasoned analyst of international climate negotiations, and several colleagues from the Wuppertal Institute for Climate, Environment, and Energy also report that '[COP-14 in] Bali saw the emergence of [a] social justice movement on climate change' (2008). They note that 'organizations ranging from Oxfam to the Third World Network and Focus on the Global South are now taking the issues of climate change seriously. As a result of their participation, the content and tone of the negotiations are beginning to change and their support has led to greatly increased confidence on the part of the larger developing countries' (Ott et al., 2008: 94).

However, emerging NGO coalitions and insider-outsider networks will likely face an uphill battle: unlike the issues of debt relief and intellectual property rights, support for an equitable post-2012 global climate regime could prove to be a significant financial burden for Western taxpayers. More fundamentally, if NGO coalitions and insider-outsider networks continue to press the issues of 'climate justice' and 'ecological debt', they could face fierce resistance to proposals that are viewed as overly redistributive or inconsistent with neoliberal economic principles (Paterson, 1996; Okereke, 2008: 26).

Therefore, if they hope to effectuate significant policy change, climate justice norm entrepreneurs will likely need to blend arguments about the moral imperative of climate change with the pragmatic economic logic of addressing a problem before it becomes too costly.²² In all likelihood, they will also need to consider burden-sharing proposals that represent moral compromise, or what Biermann (1999) refers to as a 'negotiated justice' settlement. As we argue in Roberts and Parks (2007), countries have thus far proposed 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. As a result, a truly global consensus on climate change will almost certainly require a 'hybrid justice' solution that accommodates the different circumstances and principled beliefs of many parties. Countries will need to be willing to reconsider and

negotiate their own beliefs about what is fair,²³ but as Müller (1999: 3) puts it, ‘we merely need a solution which is commonly regarded as sufficiently fair to remain acceptable’.²⁴

Fortunately, there are already a significant number of proposals in the public domain that comport this notion of ‘moral compromise’.²⁵ 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 (e.g. per capita GDP) and separates the world into three groups: those that ‘must act now’, those that ‘could act now’ and those that ‘should act now, but differently’ (Claussen and McNeilly, 1998). The Climate Action Network International has put forward a three-track proposal, with the wealthy countries moving forward on a ‘Kyoto track’ of commitments to reduce absolute emissions, the poorest focused nearly entirely on adaptation, and the rapidly developing nations focused on ‘decarbonization’. Others have focused on 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’ (e.g. Gupta and Bhandari, 1999; Ybema et al., 2000; Torvanger and Godal, 2004).

Most recently, EcoEquity – with support from the Heinrich Böll Foundation, Christian Aid, and the Stockholm Environment Institute – have developed a ‘Greenhouse Development Rights’ framework as a point of reference to evaluate proposals for the post-2012 commitment period (Baer et al., 2008).²⁶ They propose that countries below a ‘global middle class’ income of US\$9000 per capita should be assured that they will not be asked to make binding limits until they approach that level, while countries above that level should be responsible for rapid emissions reductions 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. Funds raised in wealthy countries in reducing emissions are also used to help poor countries adapt and develop in more climate-friendly ways. We believe these types of hybrid proposals are among the most promising solutions to break the North–South stalemate and climate justice norm entrepreneurs would serve themselves well by focusing their energies in these directions.

Conclusion: From Theory to Action on Climate Justice

This article has made three central points. First, we have made the argument that a significant number of ideas from rational choice institutionalism and other traditional IR theories can be useful in thinking about what might be needed to break the current stalemate in North–South climate negotiations. In particular, we have drawn attention to the central importance of worldviews, causal beliefs, and principled beliefs. At the same time, we have identified the need for more careful thinking about the fundamental question of why these ideas and worldviews are so different in the first place. This type of analysis is an essential part of understanding why it has been (nearly)

impossible for developed and developing countries to agree upon a fairness ‘focal point’ and a general approach to move negotiations forward.

Second, we have argued that the work of a new generation of bridge-builders and insider-outsider networks – that are bringing together ‘development’ NGOs like Oxfam and ActionAid and ‘environment’ NGOs like Friends of the Earth, WWF and Greenpeace – deserves greater scholarly attention. The work of the Climate Action Network, the new Climate Justice Now network and the Third World network, for example, could prove instrumental in developing ‘hybrid justice’ approaches that can break the North–South impasse. Norm entrepreneurs, such as EcoEquity, are also beginning to forge links with civil society actors in the global South and pioneer new approaches to ‘global climate justice’ that could bridge the gap between mitigation and the need for huge amounts of adaptation financing.²⁷

Finally, we have argued that while structuralist insights remain underappreciated and under-developed in discussions of international climate policy,²⁸ they shed important light on the origins of structuralist worldviews and causal beliefs as well as the need to integrate a post-2012 climate deal with existing international economic regimes. Without a structuralist perspective, it may seem unnecessary – or even distracting – to expand climate policy negotiations to include basic issues of poverty and economic development. However, we believe wealthy, industrialized countries will need to send ‘costly signals’ if they expect jaded poor nations to make concessions and promises for future emissions reductions (Roberts and Parks, 2007). Likewise, the types of ambitious mitigation promises made by China and Brazil in the run-up to Copenhagen might constitute costly enough signals to begin unwinding the cycle of distrust, which has led climate negotiations into its third decade of impasse.

A structuralist perspective also suggests that developing countries will need to carefully manage their participation in future markets in carbon offsets and emissions permits. There appears to be an important parallel between the early dependency/structuralist theories of national participation in world trade and the current decisions that developing countries face regarding their participation in carbon trading schemes, including CDM (Clean Development Mechanism) projects, REDD (Reducing Emissions from Deforestation and Land Degradation in Developing Countries) activities, and the sale of emissions reduction offsets under voluntary agreements. Currently, there is significant variation in how developing countries allow CDM developers to meet national standards of ‘social development benefits’. Many countries allow developers to meet relatively basic requirements, while a smaller group of countries demand more evidence that projects will deliver significant local benefits (Cole and Roberts, 2007; Hultman et al., 2009).

Dependency theorists saw the need for a nation wishing to develop to withdraw nearly entirely from trade with wealthy nations. A parallel now can be drawn to much of the climate justice movement, which is staking out a position of total opposition to carbon trading (including the CDM and

REDD) in favor of carbon taxes, charges, or dividends. These approaches are probably more ‘just’ in the abstract, but they may be difficult to implement, given that cap-and-trade approaches are now well entrenched. In our judgment, a developing country taking a dependency (isolationist) approach to carbon trading could miss massive opportunities to ‘upgrade’ to a lower-carbon and potentially higher-value-added development pathway.

But that does not mean developing countries should ‘open the gates’ carelessly. In the 1970s and 1980s, when poor nations confronted the atrophy of their economies, structuralists argued that the global system created mostly limitations on long-term, equitable national growth, but that very strategic decision-making in protecting local industries could open pathways towards national development. For structuralists, very selective and strategic protectionism allowed national planning and state intervention in key industries and stages in the productive cycle (Kay, 1998; Rosales, 1988). Prebisch argued that ‘the most appropriate form of intervention would consist of strengthening and diversifying the domestic production structure, in accordance with criteria of productive efficiency’ (Rosales, 1988: 23). External financing was seen as necessary, but only temporarily, as it was seen as highly unpredictable and having essentially non-nationalist values and goals. Key goals for structuralists were diversification of the economy and ‘reducing the technology gap’ (Rosales, 1988). Well managed and creatively applied, carbon financing has the potential to address these goals. Structuralists realized that more autonomous development ‘in turn, created a need for major reforms in the financial and taxation systems. . . . a number of structural transformations in the landholding and educational systems would have to be formulated in order to safeguard national interests’ (Rosales, 1988: 25). Today, this suggests a national reform agenda in which social and democratic goals move forward together with investment in a new low-carbon economy.

The climate justice debate is polarizing quickly: only a very few environmental groups are in that middle ground between the bioenvironmentalists who are pushing for rapid carbon reductions that stabilize near ‘350 ppm’ and the climate justice groups that call for an end to carbon trading.²⁹ As a result, we believe there is a need for theoretically-informed policy, with norm entrepreneurs and policy-makers who understand the structural impediments facing developing countries and how carbon finance opportunities can be wisely applied in this historical moment. Structuralism delivered nuanced analyses of social formations and the adjustments that would have to be made to move Latin America from dependency and underdevelopment into a more positive cycle of growth. Clearly some important elements were missed, but CEPAL authors argued that real development must address poverty, wages, employment, trade, democracy and participation decentralization, flexibility, competitiveness and ‘strategic economic adaptation’ (Rosales, 1988: 36). Under a post-2012 global climate regime, there may finally be a major flow of resources to help developing countries create more equitable growth, facilitate economic diversification,

and deliver significant social benefits. However, funding for their adaptation to and mitigation of climate change will need to be carefully managed to ensure that these benefits are actually realized.

Notes

1. In this article we are admittedly focused on negotiations between national states, knowing that there are important interactions and relations at many other levels, including local governments, corporations, civil society organizations, and other levels of interaction that deserve analysis. We do so because of limitations on space here and the singular authority of states in these negotiations: in the international system we have today, only national governments can make legally binding commitments.
2. Structuralism as developed in Latin America combined theory-building and active participation in national economic planning (Roberts and Hite, 2000; Leiva, 2008).
3. Consequently, constructivists hypothesize that national memberships in international norm-setting institutions will positively correlate with participation in international environmental agreements (Roberts et al., 2004).
4. In Roberts et al. (2004), we sought to explain the ‘structural roots’ of national preferences and capabilities that shape environmental treaty ratification patterns.
5. Roberts and Hite (2000) and Leiva (2008) review this literature.
6. The end of the Second World War again brought a rush of outside firms to recapture the markets and production facilities.
7. We describe some of these differences in Roberts and Hite (2000).
8. Therefore, from the perspective of understanding international relations, we believe that the value-added of world-systems theory is that it endogenizes state preferences and capabilities, explaining many of the variables that institutionalists take as given.
9. As we argue in Roberts and Parks (2007), this type of trust-building strategy could be pursued by reining in Western agricultural subsidies, tariff escalation practices, and the ongoing ‘deep integration’ and anti-industrial policy crusade, which reinforce the structuralist perception that rich countries do not want poor countries to get rich the same way they did; creating a commodity support fund to insulate natural resource-reliant countries from exogenous shocks; abandoning international economic regimes that threaten the long-term interests of developing countries; and giving developing countries a greater stake in the governance structures of international financial institutions. Later we return to how that might actually happen, because Realist insights suggest nations would not be likely to act against their own short-term material interests.
10. Additionally, as it sought to influence policy in the language of economics and transformed structuralism into an academic pursuit that could get someone tenure in North American universities (Cardoso, 1977), world-system theory has developed techniques of cross-national research that can be brought to bear on climate change. WST pioneered the use of world-wide datasets, combining economic and political variables with social outcomes. Many WST analyses involve the development of complex multivariate and path analyses that allow the direct comparative testing of indicators which reflect competing hypotheses and theories.

11. In his path-breaking 1985 book *Underdeveloping the Amazon*, sociologist Stephen Bunker theorized extensively on the issue of ecologically unequal exchange. Based on case study research in Brazil, he argued that every time an economy exports its natural resources, an energy and material loss takes place, ‘decelerating’ the extractive economy and ‘accelerating’ the productive economy. He also suggested that ‘regions whose economic ties to the world system are based almost exclusively on the exchange of extracted commodities, can be characterized as extreme peripheries because of the low proportions of capital and labor incorporated in the total value of their exports and because of the low level of linkages to other economic activities and social organization in the same region’ (Bunker, 1985: 24). Furthermore, ‘accelerated energy flow to the world industrial core permits social complexity which generates political and economic power there and permits the rapid technological changes which transform world market demands. It thus creates the conditions of the core’s economic and political dominance over the world system to which the dominant classes of peripheral economies respond with their own accumulation strategies’ (p. 24). Therefore, in Bunker’s model, the core’s productive economy consumes commodities directly and indirectly through manufactures, but also effectively consumes the extractive economy, draining it of its energy and matter and damaging the local ecology, social organization, and infrastructure. In effect, the core relies on the periphery as both a source and sink (for high entropic by-products and waste).

12. Fischer-Kowalski and Amman (2001); Muradian et al. (2002); Machado et al. (2001). Giljum and Eisenmenger (2004) suggest that the North’s ecological debt is accumulating at an accelerating rate. They also point out that ‘[t]he implementation of a strategy of absolute dematerialization would lead to radical changes of economic structures in both North and South and to price changes on international commodity markets’. A series of recent studies have also confirmed the negative social and environmental impacts for developing countries of integration into the world economic system (Frey, 2007; Jorgenson, 2006, 2008).

13. Machado et al. (2001) use an input-output model to estimate the amount of energy and carbon ‘embodied’ in Brazil’s exports and imports, and find a startling pattern: every ‘export dollar’ in Brazil embodies 56 percent more carbon and 40 percent more energy than ‘import dollars’.

14. These groups include the New Economics Foundation, Jubilee Research, Oxfam, World Wildlife Fund, World Vision, Friends of the Earth, Greenpeace, Christian Aid, Action Aid, the Heinrich Böll Foundation, the International Institute for Environment and Development, Corporate Watch, Centre for Science and the Environment, and EcoEquity.

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

16. Najam (1995: 258); Porter et al. (2000). Baumert et al. (2003: 21) rightly note that ‘achieving an internationally acceptable differentiation of greenhouse gas commitments is not just a matter of agreeing on equity principles. Countries may hold fundamentally different worldviews on climate change encompassing very different notions about the urgency of climate protection and the nature of appropriate management strategies.’

17. Raúl Estrada-Oyuéla, one of the leading climate negotiators at Kyoto, noted that ‘equity is the fundamental condition to ensure compliance of any international agreement’ (Estrada-Oyuéla, 2002: 37).

18. This insight suggests that India, China, and other large developing country emitters could potentially play a very significant role in promoting and helping to institutionalize specific equity norms in the post-2012 global climate regime. Indeed, Neumayer (2000: 191) argues that ‘the biggest bargaining power of developing countries – especially of big ones like China, India, Brazil and Indonesia – is their ability to obstruct’. It is estimated that the developing world holds 91 percent of the world’s natural capital, while the developed holds just 9 percent (Kunte et al., 1998).

19. At the COP-8 negotiations in New Delhi, India, thousands of activists marched for ‘climate justice’ in the streets. The coalition in the streets of Delhi consisted of fishers from Kerala and West Bengal representing the National Fishworkers’ Forum, farmers from the Agricultural Workers and Marginal Farmers Union, and a delegation of indigenous peoples threatened by the massive Narmada dam and by mining-impacted areas of Orissa. Delegates of NGOs from 20 other countries came to participate (Khastagir, 2002).

20. For example, see Oxfam (2008). Several of the background papers commissioned for the 2007/8 HDR were authored by scholars and policy analysts who have highlighted the importance of fairness and justice considerations. Full disclosure: Roberts was one of these authors.

21. At a 2005 G-8 Energy and Environment Ministerial Roundtable in London, Gordon Brown emphasized that ‘climate change is an issue of justice as much as of economic development. It is a problem caused by the industrialized countries, whose effects will disproportionately fall on developing countries’ (Brown, 2005). In the spring of 2004, James Wolfensohn – then head of the World Bank – was asked at a Greenpeace Business Lecture whether he thought the South should develop a financial program for the North to pay back their ‘ecological debt’. He responded, ‘It is a painful issue, and I believe it will come up in the next few years. Can the developing world hold the developed world accountable for their profligate use of fossil fuels? . . . Equity is an inevitable issue’ (Wolfensohn, 2004).

22. The latter approach is exemplified by the 2007 ‘Stern Report’, which argues that, in the long term, preventing dangerous climate change is cheaper than dealing with the damage that unchecked greenhouse gas emissions is likely to inflict.

23. 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’ (Blanchard et al., 2003: 286).

24. As a first step, there need not be a major convergence of worldviews, causal beliefs, and principled beliefs, but developed and developing countries will need to come to grips with the fact that their different perspectives on ‘reality’ have become a fundamental impediment to cooperation. Mutually-beneficial cooperation has, in a sense, become dependent on each negotiating bloc’s willingness to acknowledge – and publicly signal – that neither group’s perspective is either entirely accurate or entirely inaccurate. For example, developed countries might consider taking actions that explicitly address some of the issues that developing countries view as ‘structural obstacles’. Both sides do not necessarily need to agree on how those obstacles arose in the first place, nor on the need for changes to the fundamental structure of power-relations in the world economy. However, each negotiating bloc will need to actively work together to develop a

new ‘shared thinking’ through costly signals (Roberts and Parks, 2007; Kydd, 2000).

25. For example, the ‘Triptych’ proposal, designed by scholars at the University of Utrecht (and already used to differentiate commitments among EU countries), 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) – and 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’ sector (Groenenberg et al., 2001).

26. Roberts is a volunteer board member of EcoEquity.org.

27. Another excellent example is the German government’s sponsorship of a ‘South–North Dialogue on Equity in the Greenhouse’. See Ott et al. (2004).

28. We are left to wonder about why structuralist theories and policy proposals have been neglected for the past two decades of development theory, and why they are largely absent from contemporary debate over climate justice. The fact that structuralist approaches are so few in analyzing climate negotiations is perhaps a reflection of the domination of institutionalism in US and European studies of international relations (Jordan et al., 2009). It may also be the result of the late arrival of the world-systems theory branch of sociology and structuralism to the issue of environment (Roberts and Grimes, 2002; Roberts and Parks, 2007). Meanwhile, Western environmental movements have for years been dominated by bio-environmentalist groups who seek to address issues in a technocratic way of understanding the eco-‘systems’ and managing them using state regulatory or market-based approaches (Clapp and Dauvergne, 2005; Humphrey et al., 2002). Social Greens, who consider justice and inequality issues to be at the core of environmental damage, are often marginalized and underfunded in a movement dominated by large foundations and corporate donations (Brulle, 2000; Tokar, 2002). As a result, as we move into the third decade of debate over how to address climate change, taking structuralist (and dependency) perspectives remains quite marginal.

29. There is a debate about this, but most climate scientists warn that to avoid ‘dangerous anthropogenic interference with the climate system’ atmospheric CO₂ concentrations should be capped somewhere below 450 parts per million (ppm). The atmospheric concentration of carbon dioxide has already increased by almost 100 ppm – to roughly 385 ppm – over the ‘pre-industrial’ level (IPCC, 2007).

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Bradley C. Parks is a PhD candidate at the London School of Economics and Political Science and a Research Fellow at the College of William and Mary's Institute for the Theory and Practice of International Relations. He has written and contributed to several books and articles on global environmental politics, international political economy, and development theory and practice including *Greening Aid?* (Oxford, 2008) and *A Climate of Injustice* (MIT, 2007). He previously served as an Associate Director of Development Policy in the Department of Policy and International Relations at the Millennium Challenge Corporation (MCC). He was also a

founding member of MCC's Climate Change Working Group, which is responsible for more effectively integrating climate considerations into the selection, design, and implementation of US foreign assistance projects. [email: b.c.parks@lse.ac.uk]

J. Timmons Roberts is Director of the Center for Environmental Studies and Professor of Sociology and Environmental Studies at Brown University, USA. He received his PhD from the Johns Hopkins University in 1992 and has taught at Tulane University and the College of William and Mary. He is author of over 60 articles and chapters and six books, including *Greening Aid?* (Oxford, 2008) and *A Climate of Injustice* (MIT, 2007). He currently is focused on international justice and mechanisms to finance development and adaptation to climate change in developing countries. [email: timmons@brown.edu]