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*International Journal of Comparative Sociology* 2009 50: 385

DOI: 10.1177/0020715209105147

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# Ecologically Unequal Exchange, Ecological Debt, and Climate Justice

## The History and Implications of Three Related Ideas for a New Social Movement

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### Abstract

Building on structuralist perspectives of the world economy, a small but growing group of researchers have forged a new literature on 'ecologically unequal exchange' and documented that energy and materials disproportionately flow from the Global South to the Global North. These findings have begun to influence efforts to negotiate a 'post-Kyoto' global climate regime. Since the extraction of resources and energy is one of the most damaging stages of the chain of commodity production, a logical next step is the mounting cry from developing countries that they are owed an 'ecological debt' by the North. The G-77 and China have seized on these ideas and a movement for 'climate justice' is now gaining strength in and exerting influence in international negotiations, including the UNFCCC meetings in Delhi, Bali, and Poznań. This article reviews the history of these related three ideas and examines their potential to reshape the discussion of 'burden sharing' in the post-Kyoto world where development is constrained by climate change.

**Key words:** climate change • environmental justice • international development • low-carbon economy • structuralism

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### INTRODUCTION

On 28 October 2002, thousands of activists marched for 'climate justice' in the streets of New Delhi, India during 'COP-8', the Eighth Conference of the Parties of the UN Framework Convention on Climate Change. The coalition 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 from mining-impacted areas of Orissa. Delegates of NGOs from 20 other countries came to participate. 'This is the human face of the rising movement for Climate Justice', the movement declared (Khastagir, 2002). The protestors affirmed that 'climate change is a human rights issue' affecting 'our livelihoods, our health, our children and our natural resources'. They declared that they would 'build alliances across states and borders to oppose climate change inducing patterns and advocate for and practice sustainable development. We reject the market-based principles that guide the current negotiations to solve the climate crisis: Our World is Not for Sale!' (Khastagir, 2002).

While tempers flared in the streets, North–South negotiations teetered on the verge of collapse inside the conference hall. The European Union and developing countries, which had been working together since an earlier round of meetings in Berlin as a 'Green Group', found themselves increasingly at odds.<sup>1</sup> Fearing that limits on their carbon emissions would lead to economic stagnation, the G-77 pushed for a greater focus on 'sustainable development'.<sup>2</sup> The 'Delhi Ministerial Declaration on Climate Change and Sustainable Development' that emerged from the COP-8 negotiations emphasized that 'economic and social development and poverty eradication are the first and overriding priorities' of developing countries and that 'climate change and its adverse effects should be addressed while meeting the requirements of sustainable development'. During the negotiations, poorer nations chided industrialized countries and urged them to first 'demonstrate . . . they are taking the lead' in 'modifying longer-term trends' in greenhouse gas emissions. They also clearly staked out their right to development:

Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development [programs], taking into account that economic development is essential for adopting measures to address climate change.<sup>3</sup>

As Ott et al. (2004: 261) put it, 'it became clear [at COP-8 in 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'.

Northern environmental groups immediately pounced on the Delhi Declaration, calling it 'weak' and evidence of 'the lack of progress made . . . [in] tackling dangerous climate change'.<sup>4</sup> Pressured by many of these groups who saw their hard-won Kyoto Protocol agenda being transformed into one on Third World development, European Union negotiators 'panicked' and attempted to move forward with an agenda of enlisting global participation in a 'post-Kyoto' treaty that would go into effect after 2012 (when the first commitment period under Kyoto is set to expire). A Danish delegate reportedly said that '[d]iscussions

on what will happen after 2012 [have] to start, and some developing countries need to start thinking of engaging in measures to mitigate greenhouse gases (GHGs).<sup>5</sup> This prompted a 'furious reaction' from developing countries: with (tacit) support from the United States, the G-77 and several oil-producing countries insisted that developed countries 'take the lead' in reducing their own emissions and ensure that the global climate regimes addresses the 'adverse effects of mitigation [reducing emissions] on developing countries'.<sup>6</sup>

Six years later at the COP-14 in Poznań, Poland, the situation looked very different. Developing country representatives came to the negotiations with concrete proposals in hand and prepared to work towards a 'post-2012' global climate regime.<sup>7</sup> But Poznan proved to be a major disappointment. Developed countries rejected – or chose not to respond to – many of the proposals put forward by low income and lower-middle income countries.<sup>8</sup> The Director General of Brazil's Forest Service asked, 'If [Brazil] can talk about decreasing [emissions] 50 percent by 2018, which is in 10 years, why can't the industrialized countries commit themselves to decreasing 80 percent by 2050, which is in 50 years?'<sup>9</sup> As the negotiations came to a close, a representative of the European think tank Third Generation Environmentalism (E3G) expressed great frustration, underscoring that:

[w]e need developed countries to respond substantially to the proposals the G-77 and China have put on the table. We are hearing not only disappointment, . . . but anger from developing countries who have worked hard to come here to actually discuss substance, and yet . . . have not had their proposals responded to.<sup>10</sup>

Something else changed at Poznan and at the COP-13 negotiations in Bali, Indonesia a year earlier: the term 'climate justice' gained traction, as dozens of development, religious, youth and environmental groups from the Global North and developing country negotiators began to use the term. Herman Ott, a seasoned analyst of international climate negotiations, and several colleagues from the Wuppertal Institute for Climate, Environment, and Energy note that:

[COP-14 in] Bali saw the emergence of [a] social justice movement on climate change . . . [O]rganizations 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)

In this article, we review a new literature on 'ecologically unequal exchange' and 'ecological debt' 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 forged a new literature on 'ecologically unequal exchange' and documented that energy and materials disproportionately flow from the Global South to the Global North. These findings have begun to influence efforts to negotiate a 'post-Kyoto' global climate regime. Since the

extraction of resources and energy is one of the most damaging stages of the chain of commodity production, a logical next step is the mounting cry from developing countries that they are owed an ‘ecological debt’ by the North. The G-77 and China have seized on these ideas and a movement for ‘climate justice’ is now gaining strength in and exerting influence in international negotiations, including the UNFCCC meetings in Delhi, Bali, and Poznań.

We begin by reviewing some of the intellectual history behind the concepts of ‘ecologically unequal exchange’, ‘ecological debt’, and ‘climate justice’. We then examine these ideas and discuss their potential to reshape the discussion of ‘burden sharing’ in the post-Kyoto world where development is constrained by climate change. Although ecologically unequal exchange and the ecological debt are now well-documented, we argue that the way in which these concepts are deployed is as important as the ideas themselves. In particular, the actors and coalitions responsible for raising such issues – and the channels through which they promote such ideas – could prove to be critically important. For almost 20 years, wealthy, industrialized nations have largely had their way and promised only marginal improvements in their behavior. Developing countries have also exercised limited influence (save for their ability to obstruct) and failed to secure a ‘just solution’. Turning ‘ecologically unequal exchange’ and ‘ecological debt’ into framing perspectives that support ongoing social movement mobilization is important, but so is developing and strategically ‘marketing’ mutually acceptable and implementable policy proposals.

### THE INTELLECTUAL HISTORY OF ECOLOGICALLY UNEQUAL EXCHANGE

For a long time, authors and politicians have argued that the world’s wealthier nations were ‘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 capitalist firms appeared to be incorporating environmental considerations into their decision-making (Mol, 1995; Mol and Spaargaren, 2002). Both of these trends led many observers to argue that economic growth is decoupling from resource consumption. Although a declining material intensity of GDP does not necessarily translate into lower levels of absolute resource consumption, this ‘dematerialization’ trend is celebrated as a great environmental victory (Giljum and Eisenmenger, 2004).<sup>11</sup> This is tied to a second and related claim 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 (Bhagwati, 2004; World Bank, 1992).<sup>12</sup>

However, both of these arguments have recently come under attack by a group of researchers forging a literature on ‘ecologically unequal exchange’

(Andersson and Lindroth, 2001; Cabeza-Gutés and Martinez-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; Martinez-Alier, 2003; Muradian and Martinez-Alier, 2001a, 2001b; Muradian and O'Connor, 2001; Muradian et al., 2002; Russi and Muradian, 2003). Their empirical findings suggest that while exports are indeed shifting, trade relations remain extremely unbalanced and unfair because poorer nations export large quantities of under-priced products whose value does not include the environmental (and social) costs of their extraction, processing, or shipping (Jorgenson, 2009; Rice, 2007a).

The intellectual heritage of the 'ecological debt' and 'ecologically unequal exchange' literature can be traced back to the 'structuralist school' of the 1940s, 1950s, and 1960s. Raul Prebisch and his colleagues at the UN's Economic Commission on Latin America found a striking empirical pattern at that time: poor nations' export commodity prices tended to consistently fall relative to the prices of items exported by wealthy nations. This was believed to be the result of weak income elasticity of demand for primary products, a massive oversupply of labor, and poor union organization in developing countries. Together, these factors led to stagnant wages, inflation and lower export prices – as opposed to the rising wages and stable prices achieved in core nations. Thus, structuralists argued that the liberal emphasis on global GDP growth was a highly misleading indicator of international well-being. Some nations were growing, some were stagnating, and others were declining, and much of this variation could be explained by countries' 'natural' comparative advantages – the value of their resource-based exports and labor oversupply.

The intellectual pedigree of the 'ecological debt' and 'ecologically unequal exchange' literature is also rooted in world-systems theory, which postulates that national development cannot be understood in isolation from the global system where other nations wield greater economic and military power.<sup>13</sup> For world-systems theorists, the global 'structure' of inequality remains a central concern. They argue that nations can move up or down the global hierarchy, but must do so in a world where there are already powerful economic players with developed industrial bases and relatively overwhelming military might with which to manipulate political and economic relations. The international division of labor is said to function in the following way: core wealthy nations import raw materials and export high value services and industrial manufactures, while governing powerful financial institutions. Poor peripheral nations export their natural resources and some supply cheap labor directly to manufacturers. Semi-peripheral middle-income nations lie somewhere in the middle, with some industry, higher value services, and a partially diversified export structure. A few nations move up the global hierarchy of economic and political power, but the basic relationship of extraction, production, and consumption between core and (semi-)peripheral nations remain largely unchanged.

The structuralist approach of world-systems theory also helps explain why many peripheral and semi-peripheral nations are currently locked into ecologically unsustainable patterns (Roberts and Grimes, 2002; 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: 17) 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.<sup>14</sup>

In the path-breaking 1985 book *Underdeveloping the Amazon*, sociologist Stephen Bunker conducted one of the earliest studies 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. (Bunker, 1985: 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.<sup>15</sup> In effect, the core relies on the periphery as both a source and sink (for high entropic by-products and waste).<sup>16</sup>

## EMPIRICAL SUPPORT FOR ECOLOGICALLY UNEQUAL EXCHANGE

In a nutshell, the ecologically unequal exchange literature has shown 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. Using a 'materials flow' accounting methodology, ecological economists have argued that physical numeraires can be used to bring these flows of material and energy back into the equation. The easiest way to do so is by measuring the physical weight of import and export flows. However, more sophisticated methodologies are being developed to account for indirect material flows used in the production process, as well as waste and emission flows (Fischer-Kowalski and Haberl, 2007; Giljum, 2004; Machado et al., 2001; Muradian et al., 2002).

Empirical work using materials flow analysis has led to an important finding: many developing countries traditionally seen as successful, export-oriented economies are suffering significant, unrecorded (economic and ecological) losses (Giljum, 2004; Machado et al., 2001; Muradian et al., 2002). Using time series data on consumption of natural resources, 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 identifies a clear 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 the responses of developing countries to declining terms of trade. They find that falling prices correlate with large export drives for primary products. Of the 18 natural resource exports from developing countries they examine, 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 illuminating. The most systematic and comprehensive empirical study employing this latter 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 Schütz, 2001a). Primarily due to the import of fossil fuels, semi-manufactured products, and abiotic raw materials, the EU imports – in physical terms – more than four times what it exports. 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 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). In this regard, materials flows analysis appears to debunk earlier claims



that we have entered an era of dematerialization (Jorgenson, 2009; Price, 2007). In reality, 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 no doubt become more efficient – where efficiency is defined as the material intensity of one’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 (Fisher-Kowalski and Amman, 2001).<sup>17</sup> Giljum and Eisenmenger (2004: 92) argue 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’. Jorgenson (2006, 2009; Jorgenson and Rice, 2006) and Rice (2007b) have also conducted a series of studies, which document the unbalanced ‘ecological footprints’ of highly exporting poor countries and show that the vertical flow of exports from developing to developed countries suppresses resource consumption levels in the former while increasing forms of environmental degradation within their borders.

Global climate change is a particularly important area in which ecologically unequal exchange appears to be in effect. 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). 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.<sup>18</sup> Therefore, while national CO<sub>2</sub> 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 – for example, ‘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 Martinez-Alier and the Ecuadorian environmental group Acción Ecológica, is that wealthy nations have been running up a huge debt over centuries by exploiting the raw materials and ecosystems of poor nations (Acción Ecológica, 2003; Martinez-Alier, 2003; Simms et al., 2004). 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).<sup>19</sup>

Developing countries have recently seized on these ideas of ecologically unequal exchange and ecological debt. In 2000, the Chinese government and the G-77 declared at their 'South Summit' that:

[w]e 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)

In 2008, China's Minister of Foreign Affairs, Yang Jiechi, underscored that many of China's carbon emissions are 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). A growing number of developing country leaders have also begun to espouse the position that the North owes the South an 'ecological debt' during global climate negotiations (Roberts and Parks, 2007). As we will argue at greater length below, these concepts are also beginning to gain traction in the academic and policy communities within the Global North. 'Insider-outsider networks' and transnational activist networks have begun to coalesce around these issues.

### THE CLIMATE JUSTICE IDEA AND MOVEMENT: PROMISE AND PITFALLS

The idea that climate change is unjust is not new, but the effort to address this injustice is gaining urgency as impacts are being increasingly felt in poor nations threatened by the changes. The main threats are drought and agricultural decline (most notably affecting sub-Saharan Africa), sea level rise (Pacific island atolls, Bangladesh and the Nile delta being the most vulnerable), and the growing risk of devastating hurricanes (which have pounded Central America and the Caribbean, Asia and Africa).<sup>20</sup> At the same time, there are stark inequalities in responsibility for greenhouse gas emissions. With only four percent of the world's population, the US is responsible for over 20 percent of all global emissions. That can be compared to 136 developing countries that together are only responsible for 24 percent of global emissions (Roberts and Parks, 2007). Poor countries therefore remain far behind wealthy countries in terms of emissions per person.<sup>21</sup> The term 'climate justice' is increasingly used to characterize the disparities of responsibility and impact.

The term 'climate justice' apparently was first used in the academic literature by Henry Shue in a 1992 contribution to the landmark book *The International Politics of the Environment* by Hurrell and Kingsbury (Shue, 1992). Another early work was *In Fairness to Future Generations* by Edith Brown Weiss (1989).<sup>22</sup> But academic use of the term 'climate justice' did not spawn the movement. It was the work of converging elements around the world. From the US side, prominent environmental justice activists such as Bob Bullard of Clark Atlanta University increasingly worked with minorities in other nations. United Nations conferences have also been important forums for such bridge-building to take place. Bullard cites the conference on racism in Durban, South Africa in 2000 as a critical time when environmental victims around the world realized that environmental justice was a global problem, and began to create international networks.<sup>23</sup> At the COP-6 negotiations in The Hague in November 2000, the 'Rising Tide' coalition for climate justice came together, describing itself as:

an international network of groups and individuals committed to a grassroots approach to fighting for climate justice. We believe that the Kyoto protocol will fail to combat the climate change crisis. Instead the protocol promotes the self-interest of corporations and industrialized nations and marginalises issues of global equity and the environment.

In addition to an effective global climate agreement, the network calls for the:

[r]epayment of the ecological debt of the north to the south. Ecological debt is caused by the extraction, use and destruction of southern resources such as fossil fuels, minerals, forests, marine and genetic resources. These resources are usually exported to the north under unequal terms of trade, typically to pay back third world debt. Northern industrialized countries have an obligation to help repair and reverse the damage caused to the biosphere.

While these coalitions are in their infancy and seemingly fragile, they have significant potential to exert significant influence in global climate negotiations. Keck and Sikkink (1998: x) note that:

where the powerful impose forgetfulness, [transnational activist] networks can provide alternative channels of communication . . . Transnational networks multiply the voices that are heard in the international and domestic policies. These voices argue, persuade, strategize, document, pressure and complain . . . By overcoming the deliberate suppression of information that sustains any abuses of power, networks can help reframe international and domestic debates, changing their terms, their sites, and the configuration of participants.

The emerging climate justice movement has sought to bring together environmental activists with those most likely to suffer first and worst from climate change: people in low-lying areas facing flooding and sea-level rise, in semi-arid areas dependent upon irrigation-fed agriculture, and so on. As part of corporate and product-focused campaigns (such as against Shell or PVC plastics), Greenpeace International was one of the first non-state actors to take this approach – connecting victims of corporate polluters worldwide, bringing to the UN

Commission on Human Rights victims of Shell from the US and Nigerian Ogoniland. This idea of connecting people in distant places through human rights activism is also being applied in the context of climate change. Corporate Watch, a San Francisco-based NGO, launched an initiative in the late 1990s to redefine the global warming issue as a question of local and global justice. They released a report called *Greenhouse Gangsters vs Climate Justice* which was 'designed to create a framework from which indigenous peoples, the environmental justice movement, fenceline communities affected by oil refineries, students and anti-globalization activists [could] begin to assert leadership on the global warming issue' (Bruno et al., 1999). The report focused on the oil industry and how it helps create hydro-meteorological disasters and fails to help people prepare for and cope with such disasters. In November 2000, Corporate Watch co-organized the First 'Climate Justice Summit' in The Hague, bringing representatives from communities already adversely impacted by the fossil-fuel industry from the US and Southern countries together to join the climate change debate.<sup>24</sup>

In the US, another coalition of small and medium-sized groups, varying from local to national in scale, called the Environmental Justice and Climate Change Initiative (EJCC), was organized under the leadership of another San Francisco-based group called 'Redefining Progress'. That EJCC Initiative is made up of a wide range of traditional US environmental justice groups, and some new partners have joined.<sup>25</sup> In March 2004, the first academic conference on EJCC was organized at the University of Michigan's School of Natural Resources and the Environment. Graduate students working under sociologist Bunyan Bryant, a founder of the US Environmental Justice movement, organized the conference in cooperation with Redefining Progress. At the conference a number of academics and environmental justice activists from Environmental Justice and indigenous groups began a process of strategizing on the issue. 'The Climate Justice Declaration' was drafted there, building on two earlier documents, the Bali Principles of Climate Justice and the Climate Change Initiative's '10 Principles for Just Climate Policies in the US'. These in turn were built on the original 1991 Principles of Environmental Justice, which have now proven influential around the world declaring that environmental protection and justice must be addressed together. The Just Transition Alliance is part of the EJCC, as is one union – the Southwest Public Worker's Union. The late attention by unions to supporting these climate justice coalitions is somewhat surprising since one of their ten policy change principles in the US is to 'ensure just transition for workers and communities'.<sup>25</sup>

There is overlap but not perfect correspondence in interests between largely Europe-based climate justice groups looking at international patterns of inequality by income, and those groups focusing on race and ethnic discrimination causing climate injustice. For example, the London-based Rising Tide Coalition for Climate Justice consists of environmental and social justice groups from around the world (especially Europe) and appears to be much more

focused on international inequality based on national incomes, not on race and ethnicity. The make-up of the Climate Justice Network is somewhat similar; it contains many environmental groups (most notably Friends of the Earth), environmental justice organizations, and social justice organizations.

It is still far from clear that the emerging transnational network around climate justice will influence the fundamental characteristics of the post-2012 global climate regime. The movement is made up of a disparate set of coalitions, which for years seemed to at times exist mostly on paper or on websites. However, the emerging climate justice network has the potential to influence future negotiating outcomes by arming developing countries with concrete proposals, 'shaming' wealthy, industrialized countries (i.e. moral suasion) into taking more aggressive action, and subjecting alternative policy proposals to public scrutiny. Indeed, there are already preliminary signs of bridge-building with developing countries and developed country 'insiders' around the issues of climate justice, ecological debt, and even 'contraction and convergence' to a per capita allocation of atmospheric rights. As we noted earlier, the G-77 and a coalition of more than 30 Western NGOs, policy institutes, and think tanks have begun to more aggressively push for some remuneration of the ecological debt.<sup>27</sup>

#### CLIMATE JUSTICE 'INSIDER-OUTSIDER NETWORKS'

As of several years ago, few mainstream environmental NGOs, development NGOs, and official aid agencies in the Global North had seized upon or begun advocating for the notion of 'climate justice' (Parks and Roberts, 2005). However, this is also beginning to change. 'Insider-outsider networks' have emerged. These networks are typically made up of actors that are part of the same 'epistemic community' (i.e. individuals and organizations who share similar worldviews, causal beliefs, and principled beliefs). 'Insiders' work for governmental and inter-governmental institutions that possess structural power, while 'outsiders' often work in academic, think tank, and non-governmental advocacy circles. Their joint influence lies in their ability to 'legitimate new ideas, knowledge, and approaches' and 'deligitimate old ones' (Callaghy et al., 2001: 128).

There are some preliminary indications of this type of networking around the idea of 'climate justice'. The 2007/2008 edition of the UNDP's flagship *Human Development Report* (HDR) publication and focused extensively on the relationships between climate change, inequality, 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 highlight the importance of the 'very large "carbon debt" that the rich countries owe the world' and argue 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 2007/2008 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.<sup>28</sup>

Another example is the German government's sponsorship of a 'South-North Dialogue on Equity in the Greenhouse' (Ott et al., 2004). In 2004, Germany's leading foreign aid agencies, GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit) and BMZ (the German Federal Ministry for Economic Cooperation and Development), brought together 'thought leaders' from across the developing world, many of whom were once lead climate negotiators for their own countries, and sought to '[develop] a framework for future climate negotiations and [identify] the political conditions required for its promotion, taking into account the current political landscape' (Ott et al., 2004: II).

These initial networking and bridge-building efforts 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.<sup>29</sup> Recently, the UK's environment agency (DEFRA) also acknowledged the ecologically unequal exchange phenomenon, admitting that the nation's carbon emissions had declined only if one excludes imports from China. Ott et al. (2008: 94) also notes '[COP-14 in] Bali saw the emergence of [a] social justice movement on climate change'.

However, emerging NGO coalitions and insider-outsider networks will likely face an uphill battle, as 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 principles (Okereke, 2008: 26; Paterson, 1996).

Therefore, if they hope to effectuate significant policy change, climate justice 'norm entrepreneurs'<sup>30</sup> 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.<sup>31</sup> 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. Consequently, 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 reconsider and



negotiate their own beliefs about what is fair,<sup>32</sup> but as Müller (1999: 3) puts it, ‘we merely need a solution which is commonly regarded as sufficiently fair to remain acceptable’. A key task, then, for climate justice norm entrepreneurs is to identify and advocate for such proposals.

Fortunately, there are already a significant number of proposals in the public domain that fall in line with this notion of ‘moral compromise’.<sup>33</sup> 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; Torvanger and Godal, 2004; Ybema et al., 2000).

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).<sup>34</sup> They propose that countries below a ‘global middle class’ income of 9000 USD 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 with 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 on such proposals.

## **CONCLUSION: TURNING IDEAS INTO WORKABLE PROPOSALS FOR CLIMATE JUSTICE**

The ecologically unequal exchange and ecological debt literatures vindicate the Southern claim that Northern consumption is responsible much of the climate change problem. But more important than understanding the origins of these ideas is the role that such ideas can play in shaping a more integrated social and environmental agenda for a post-carbon world.

Although they appear to be neither the most just nor the most effective in terms of emissions reductions, the international community has settled on cap-and-trade approaches for wealthy countries that do not meet their Kyoto promises to buy emission permits from poor nations. This approach has drawn sharp criticism from some climate justice activists and scholars. Key actors in the current climate justice movement have established a position that is directly opposed to carbon trading (Environmental Justice Leadership Forum on Climate Change, 2008), calling it 'carbon colonialism', 'indulgences', and 'pure fraud and fiction'. Theirs is a revolutionary rather than a reformist approach, and it is also a rather risky one. This is unfortunate because their outright rejection of carbon trading appears to be marginalizing the movement in international negotiations and in national discussions.

We take a different tack. In light of the current political environment, we argue that developing countries should seek to carefully manage their participation in future markets in carbon offsets and emissions permits. This may on the face of it seem like an uncontroversial proposition, but the climate justice debate is quickly polarizing: 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.<sup>35</sup> 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 pursued in a responsible manner at this particular moment in history.

There is an important parallel between the early dependency and 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 (Reduced Emissions from Deforestation and Land Degradation in Developing Countries) activities, and the sale of emissions reduction offsets under voluntary agreements. Dependency theorists saw the need for a nation wishing to develop to withdraw nearly entirely from trade with wealthy nations. Similarly, the climate justice movement is now 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 deeply entrenched. In our judgment, a developing country taking a dependency (isolationist) approach to carbon trading risks losing significant opportunities to 'upgrade' to a lower-carbon and higher-value-added development pathway. Under a post-2012 global climate regime, there may finally be a major flow of resources to help developing countries create more equitable growth, encourage economic diversification, and deliver significant social benefits.



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 largely created 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; Leiva, 2008; 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 understood to be highly necessary, but only temporarily, as it was seen as highly unpredictable and lacking nationalist values and goals. Key objectives for structuralists included 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.<sup>36</sup> Structuralists realized that more autonomous development ‘in turn, created a need for major reforms in the financial and taxation systems [and] 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 alongside investments in a new low-carbon economy.

## ACKNOWLEDGEMENT

The views expressed in this article are those of the authors and do not necessarily represent those of their employers.

## NOTES

- 1 Ott (2003).
- 2 The Group of 77 is actually a group of 130 developing countries.
- 3 Shah (2002).
- 4 Friends of the Earth UK (2002).
- 5 Shah (2002).
- 6 One commentator noted that the US was able to ‘bring deliberations on several issues to a complete standstill’ (Ott, 2003: 9).
- 7 12 months earlier, negotiators agreed upon the ‘Bali Roadmap’, which identified a series of steps that might be taken to break the North-South impasse and solve the global climate crisis. In particular, a process under an Ad Hoc Working Group for Long-Term Cooperative Action under the Convention (AWG-LCA) was tasked with breaking the deadlock over who should act in cleaning up the atmosphere, and how. The answer, according to the Roadmap, was that developed and developing countries would move forward with ‘a shared vision for long-term cooperative action, including a long-term global goal for emissions reductions, to achieve the ultimate objective of the Convention [avoiding dangerous climate change]’.

- 8 For example, rich countries flatly rejected the developing countries' proposal to increase the levy on CDM carbon credits. A second Southern proposal – to earmark a portion of the money generated through the auction of pollution allowances in the carbon markets of Western countries (e.g. the EU's Emissions Trading Scheme) – also proved to be a political non-starter (Jaura, 2008).
- 9 Eilperin (2008).
- 10 [[http://www.bboxet.com/Climate\\_change/On:UNFCCC/](http://www.bboxet.com/Climate_change/On:UNFCCC/)]. Prodipto Ghosh, a member of the Prime Minister of India's Council on Climate Change, expressed complete disbelief, noting that 'in the 12 [rounds of climate change negotiations] I have been privileged to attend so far, this is one of the saddest moments I have witnessed' (Jaura, 2008).
- 11 According to UNDP's 1998 *Human Development Report*, the richest 20 percent of the world's population consumed 46 percent of all meat and fish, 65 percent of all electricity, 58 percent of all energy, 74 percent of all telephones, 84 percent of all paper and 87 percent of all cars. The poorest 20 percent, by contrast, consume less than 10 percent of all these products (UNDP, 1998). A strong body of evidence also suggests that many of these resources originate in poor and middle-income nations. Arden-Clarke (1992) reports that roughly two-thirds of all primary commodity exports originate in the developing world. Yet, dollar-dependent export measures mask even deeper inequalities. If one measures national export-import ratios in terms of physical weight, the developed world becomes a much greater net importer of environmentally intensive products (Andersson and Lindroth, 2001; Fischer-Kowalski and Amman, 2001).
- 12 Arrighi et al. (1999) level a withering critique of these claims on development grounds, noting that poorer nations actually face sharply diminishing returns on industrialization.
- 13 Braudel (1981); Frank (1969) and Wallerstein (1972). More recently, see Giljum and Eisenmenger (2004); Hornborg (1998a, 1998b).
- 14 Röpke (1999) argues that 'prices are distorted not only because of the present [environmental] externalities, but also because such externalities have existed for nearly two centuries and have been built into the social and physical structures of society as accumulated externalities'.
- 15 Bunker (1985) sought to apply insights from thermodynamic law to global political economy. He argued that energy and matter are 'withdrawn from the natural environment of the extractive economies and flow toward and are concentrated in the social and physical environments of the productive economies, where they fuel the linked and mutually accelerating processes of production and consumption'. His argument, then, can be characterized as one of 'social entropy'. Industrial capitalism produces a range of high energy outputs and requires a constant flow of low-entropy inputs from other areas – specifically, the periphery and semi-periphery, which house the majority of low-entropy stocks.
- 16 Some would argue that this is nowhere more evident than in the climate change arena, where core nations undercompensate peripheral nations for their critical energy sources, and then, at the same time insist that they sequester their 'luxury emissions' by planting reforestation projects, potentially creating 'green deserts' which provide limited job creation and economic progress in the short term.
- 17 Fisher-Kowalski and Amman (2001); Machado et al. (2001), Muradian et al. (2002). In a recently published article, 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 (Jorgenson, 2003, 2006, 2009).
- 18 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'.
  - 19 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.
  - 20 Parks and Roberts (2005).
  - 21 Overall, the richest 20 percent of the world's population is responsible for over 60 percent of its current emissions of greenhouse gasses. That figure surpasses 80 percent 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 100 years.
  - 22 See also her chapter in Choucri (1993).
  - 23 Bullard (personal communication, 2001).
  - 24 They report that:
 

[i]n the Spring of 2001, [Corporate Watch] brought two environmentalists from opposite ends of the Earth on a Climate Justice Tour. Oronto Douglas from Environmental Rights Action in Nigeria's Niger Delta and Sarah James from the Gwich'in Steering Committee in Arctic Village, Alaska traveled with CorpWatch to seven cities, passionately bringing to life the connections between the local effects of oil and the global dynamic of climate change. They met with oil-impacted communities in the San Francisco Bay Area, Louisiana and Texas; they challenged Chevron at its annual shareholders meeting; and they told it like it is on CNN and in other media . . .
  - 25 Back in the summer of 2004, these organizations had joined the Environmental Justice and Climate Change Initiative: Black Leadership Forum, Church Federation of Greater Indianapolis, Church of the Brethren, Communities for a Better Environment, CorpWatch, The Corporation for Enterprise Development, Council of Athabaskan Tribal Government, Deep South Center for Environmental Justice at Xavier University, EcoEquity, Environmental Justice Resource Center at Clark Atlanta University, Georgia Coalition for the Peoples' Agenda, Indigenous Environmental Network, Intertribal Council On Utility Policy, Just Transition Alliance, National Black Environmental Justice Network, Kids Against Pollution, Native Village of Unalakleet, New York Public Interest Research Group, North Baton Rouge Environmental Association, Redefining Progress, Southern Organizing Committee for Economic & Social Justice, Southwest Network for Environmental and Economic Justice, Southwest Workers Union, United Church of Christ Justice and Witness Ministries, United Methodist Church, West County Toxics Coalition, and the West Harlem Environmental Action (WE ACT).

- 26 [www.ejcc.org]. In 2008, a new organization called 'Climate Justice Now!' took the work of the EJCC network to the climate negotiations in Poznan, Poland, opposing carbon trading and the mode of organizing taken by the mainstream environmental organizations collected under the umbrella of CAN, the Climate Action Network.
- 27 Calculating the 'ecological debt' is a daunting task; however, there have been some initial attempts at measurement. Several scholars from the University of California at Berkeley estimated that the industrialized world's ecological debt to poorer nations exceeds \$1.8 trillion. See Srinivasan et al. (2009) and [http://www.universityofcalifornia.edu/news/article/17184].
- 28 For example, see Oxfam International (2008). Several of the background papers commissioned for the 2007/2008 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.
- 29 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).
- 30 Social constructivists focus on 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 (Acharya, 2004; Finnemore and Sikkink, 1998). These actors are often referred to as 'norm entrepreneurs'.
- 31 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 are likely to inflict.
- 32 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).
- 33 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).
- 34 Roberts is a voluntary board member of EcoEquity.org.
- 35 Most climate scientists warn that to avoid 'dangerous anthropogenic interference with the climate system' atmospheric CO<sub>2</sub> concentrations should be capped somewhere between 450 and 550 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).

- 36 It is worth noting that there is already 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, n.d.; Hultman et al., 2009).

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