

**Governing the  
Global Commons:  
International Environmental  
Agreements and the North/South  
Divide**

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## **Abstract**

The roots of today's ecological crises are the economic and political incentive structures which drive unsustainable environmental degradation. In order to control environmental destruction, states must cooperate to alter these incentive structures. However, successful international environmental treaties challenge state sovereignty and must overcome scientific uncertainty, unique participation and enforcement challenges, and two-level games, doing so within the global political landscape, a landscape characterized by a bitter schism between the "developed" countries of the "North" and the "developing" countries of the "South." Extreme asymmetries of power, pollution, and living standards, as well as dueling ideologies, complicate such cooperation. Using the Rational Design framework, this study shows key design differences in the centralization of compliance monitoring and mandating domestic legislation within international agreements between exclusively "Northern" countries and agreements with both "Northern" and "Southern" countries, making a compelling case for the importance of future research on the North/South divide.

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# Introduction

*“Compare the planet’s resources to a large sum of money which pays interest. If you live on the interest alone, the capital stays intact, and you can live well indefinitely. This interest is our available environmental space. On the other hand, if you use even a small part of the capital each year as well as the interest, the end will come surprisingly fast. After all, because of a decrease in the capital, the annual interest will also decrease at an increasing rate. One will therefore eat faster and faster into the capital. This is the foolish way we are living now.”<sup>1</sup>*

At the turn of the millennium, the human race has reached a unique point in its history when confronting local, regional, and global environmental challenges has become unavoidable. Once environmental concerns were the talk of the elite, but now even popular culture is infused with references to global climate change, and bored office workers are discussing it around the water cooler. For the first time, it is possible to envision, in the near future, a human impact on the planet great enough to decimate Earth as we know it. Legitimate questions have been raised about future generations’ ability to survive on a planet with resources that have been or are projected to be depleted or denigrated beyond the Earth’s ability to regenerate them. Scientific investigations of environmental concerns such as climate change, air and water pollution, soil depletion, and chemical bioaccumulation have led to scientific questions about future generations’ ability to survive on this planet if substantive action is not soon taken.<sup>2</sup>

## ***The Roots of the Crises: Global Incentive Structures***

Yet no substantive action to confront the world’s growing environmental problems will be successful without addressing their underlying cause—a cause that is not simply ecological in nature, but rather fundamentally organizational: destructive ecological management. This destructive management is a product of the global incentive structures that motivate actors—

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<sup>1</sup> Carley and Spapens 1998, 50.

<sup>2</sup> Ibid., 1-27.

from the micro level of individual people and families to the macro level of states, international organizations, multinational corporations and other global organizations—to use natural resources in an unsustainable way.

The foundation of these incentive structures can be found in the current international organization of sovereign states, which has sliced an intricate, complex, and interdependent global ecosystem into a patchwork of territories with different ecological “managers,” creating essentially a prisoner’s dilemma with almost two hundred actors. The existing state boundaries are also often illogical with respect to the prudent management or preservation of the Earth’s natural resources. This situation is compounded by the incentive structure added by global capitalism, which, while requiring natural resources as inputs and raw materials, currently ignores or severely undervalues “ecological capital” and “ecological expenditure,” making environmental degradation and the production of externalities, for most intents and purposes, “free.” Further aggravating the problem, economic discount rates, an important tool in economic cost-benefit analysis, severely discount the value of the future, and in doing so, devalue future environmental resources and the true cost of current environmental degradation.<sup>3</sup> This neglect of important ecological concerns on the part of economists was epitomized in the controversial statement by one American economist, who stated that the effects of global warming on the United States economy would be negligible, since agriculture was only three percent of the United States gross national product.<sup>4</sup>

Another significant factor contributing to our global environmental crises is the extreme inequality between the world’s rich and poor. Both the world’s affluence and the world’s poverty are causes of environmental degradation. The rich, industrialized countries of the world

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<sup>3</sup> Davidson 2000, 61-80.

<sup>4</sup> Davidson 2000, 7.

consume goods and resources at an unsustainable rate: consumption since 1950 has been estimated to be equal to the consumption of all previous human history.<sup>5</sup> On the other end of the spectrum, “poverty itself pollutes.”<sup>6</sup> When individuals and communities do not have another option, degrading the environment is many times the only possibility to survive. This excessive exploitation for survival is a vicious cycle, for as land and other resources become worse and worse, the people using them can reap fewer and fewer resources, forcing them to find more land and unexploited resources.<sup>78</sup> This effect is especially present in rainforest destruction.<sup>9</sup>

### ***Governing the (Global) Commons***

What can be done to correct such pervasive and self-destructive incentive structures? Felipe Gonzalez, a pivotal former president of Spain, once said that the management of public spaces is the role of the government. Indeed, in a parallel domestic situation, the government could step in to alter the “price structure” of resource usage, until the real costs of environmentally damaging actions were enough to lead to an ecologically optimal outcome, or zone and regulate land use and other environmental resources. Yet the Earth and its atmosphere are a public space that lack a central government with the power to manage and coordinate resource use, and each state operating within its own self-interest economically creates negative externalities for all states. Furthermore, it is clear that as long as such self-destructing incentive structures are in place, it is reasonable to expect the current unsustainable rate of environmental degradation to continue, presumably until there are no more resources to be had.

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<sup>5</sup> Carley and Spapens 1998, 3.

<sup>6</sup> French 2005, 15.

<sup>7</sup> Ibid., 15.

<sup>8</sup> Vandermeer and Perfecto 2005.

<sup>9</sup> Ibid.

Thankfully, while the organizational challenge of governing a global common space with almost two hundred individual managers is daunting, states do have an incentive to cooperate—many times the true difficulty is surmounting the various barriers to international environmental cooperation. Historically, the organizational solution to international cooperation problems has been the international institution, defined by Koremenos, Lipson, and Snidal in The Rational Design of International Institutions as “explicit arrangements, negotiated among international actors, that prescribe, proscribe, and/or authorize behavior.”<sup>10</sup> As Mitchell and Keilbach state in their *Situation Structure and Institutional Design: Reciprocity, Coercion and Exchange*, published in The Rational Design of International Institutions, “States create international institutions in attempts to resolve problems they cannot solve alone.”<sup>11</sup> In this way, cooperation under anarchy is possible.

### ***The Great Divide: North and South***

Yet while the environmental challenges of the day are certainly problems that states cannot solve alone, the barriers to environmental cooperation are particularly difficult because they are entrenched in the global political landscape, and often inextricably linked with other issues such as development and international trade. In fact, the great economic inequality throughout the world that is so much part of the problem of environmental destruction is also a critical barrier to its solution, and any international effort to confront environmental destruction or tackle global environmental issues, such as climate change, must do so within the context of the current global political landscape: a landscape characterized by a bitter and growing schism

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<sup>10</sup> Koremenos, Lipson, and Snidal 2001, 2.

<sup>11</sup> Mitchell and Keilbach 2001, 131.



between non-industrialized or newly industrializing poorer countries in the global “South” and the wealthy industrialized countries of the global “North.”

It is important to emphasize, as so many others who have struggled with such imprecise terminology, that “the North” and “the South” are not geographic terms, but rather extreme simplifications of the global political landscape used to facilitate a discussion about two distinct interest groups. These terms obscure significant differences in culture, geographic and ecological regions, history, philosophy and religion between both countries of the “North” and of the “South” in order to reduce the problem of global negotiations to its deepest and most impacted schisms. Thus, to be a country in the “North” does not denote to be a country north of the equator, or vice versa; Australia, for example, is a “Northern” country in terms of its political interests. However, I will use these terms in place of the terms “developed” and “developing” because I find those terms to be more misleading: the term “developed” implies a state of completion, while “developing” implies a work in progress. As will be apparent, both sets of countries inflict unsustainable environmental damage to the planet.

However, in spite of the limitations of these terms, it is possible to say that Northern countries and Southern countries have very different goals and concerns that inform and shape their interpretation of environmental challenges and how the international community should respond, especially on such globally relevant issues such as climate change. Furthermore, these two loosely defined interest groups have opposing economic, political, and ideological interests that complicate cooperation immensely. Given the great divide in interests and goals between countries of the North and countries of the South, how is global environmental cooperation even possible?

The research of the Rational Design projects seeks to analyze how states overcome or work around barriers to cooperation through the design of international agreements, and, in that spirit, I will analyze a random sample of environmental agreements in an attempt to answer an important question: Are the design features of agreements that have not had to bridge the North/South divide different from those that have? The answer to this question is significant because it could lay the foundation for further research on the effectiveness of varying environmental institutional designs, as more and more environmental issues require global cooperation.

## **Theory**

Rational Design takes the perspective that international institutions are neither simply norm-establishing entities—although they do play an important role in disputing and disseminating international norms—nor simply reflections of state power.<sup>12</sup> Rather, according to Rational Design theory, “states use international institutions to further their own goals.”<sup>13</sup>

Rational Design theory is based on four underlying assumptions: 1) international actors are self-interested and design institutions deliberately to advance joint interests with other actors, 2) the shadow of the future—the probability of repeated interaction between actors—is great enough that the potential for cooperation under anarchy exists, 3) it is costly for states to establish and participate in international agreements, and 4) states are risk-averse.<sup>14</sup>

Accepting these assumptions as true, the analytic strategy of the Rational Design project is to “treat institutions as rational, negotiated responses to the problems international actors

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<sup>12</sup> Koremenos, Lipson, and Snidal 2001, 2.

<sup>13</sup> Ibid., 2.

<sup>14</sup> Ibid., 21-22.

face.”<sup>15</sup> Furthermore, while cooperation may be both possible and desirable, in many cases more than one possible cooperative solution exists to any given international challenge. Since each state wants to maximize its gains from cooperation, the states involved must “fight over institutional design because it affects outcomes.”<sup>16</sup>

Because institutional design affects outcomes, the Rational Design project asserts that the vast heterogeneity of design differences that exist among international agreements must not be random—rather, these design differences are “systematic and sophisticated.”<sup>17</sup>

With this analytic lens, the Rational Design project presents conjectures linking barriers to cooperation, called cooperation problems, to specific design features of agreements. By analyzing cooperation problems such as problems of distribution, enforcement, the number of actors involved, and different types of uncertainty as independent variables, the Rational Design framework attempts to explain variations in institutions’ rules for membership, the scope of the issues they cover, the degree to which they centralize tasks, their rules for controlling the institution, and the flexibility of their arrangements. These five dimensions are key issues for negotiators and analysts alike.<sup>18</sup>

This analysis is especially important for the study of international relations, especially since, as James Morrow points out, “institutions influence a states judgment of how it should use its power to pursue its interests; different institutions could produce different patterns of behavior.”<sup>19</sup>

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<sup>15</sup> Koremenos, Lipson, and Snidal 2001, 2.

<sup>16</sup> *Ibid.*, 2.

<sup>17</sup> Koremenos 2005, 549.

<sup>18</sup> Koremenos, Lipson, and Snidal 2001, 8-13.

<sup>19</sup> Morrow 2001, 231.

In this study, I will strive to apply the Rational Design framework in order to examine the effects of the North/South divide on the design of international environmental treaties. The reasons this particular topic deserves special attention are outlined below.

### ***Why Environmental Treaties Deserve Special Attention***

One of the goals of the Rational Design framework is to “explain phenomena across a range of substantive issues,” including security, economics, the environment, and human rights.<sup>20</sup> Yet in one essay evaluating the framework, James Morrow stated that the framework “needs to attend more carefully to variations of strategic dynamics of different issues.” He continued, “carefully considering the problems each issue poses is necessary to determine what institutions we should expect in that area.”<sup>21</sup> The environmental issue area is one such area that deserves special attention because it has unique strategic challenges.

### **Special Considerations for Sovereignty**

As Schwabach explains, “Natural systems are not constrained by national boundaries; if they are to be protected, they must be protected internationally, which requires cooperation and some sacrifice of sovereignty by the countries concerned.”<sup>22</sup> Yet while all international agreements require some limitation of state sovereignty, environmental agreements go further in the extent that they limit sovereignty because they often attempt to limit states use of natural resources, which are many times a key source of power and influence. Furthermore, they limit sovereignty “in the extent to which they regulate domestic activities. That is, IEAs [International Environmental Agreements] do not concern solely those national activities whose impacts fall

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<sup>20</sup> Koremenos, Lipson, and Snidal 2001, 36.

<sup>21</sup> Morrow 2001, 231.

<sup>22</sup> Schwabach 2006, xiii.

wholly upon international resources. They are addressed fundamentally to the regulation of all national activities that have any impact on global interests.”<sup>23</sup> In fact, Schwabach argues that because international agreements offering “one-time solutions” to environmental problems were unsuccessful in attracting the needed participants because they required states to “sign away” too many sovereign rights at once.<sup>24</sup> These political difficulties made the example of the Antarctic Treaty system, what is now thought of as the framework-plus-protocol approach, more attractive.<sup>25</sup> In this approach, states first simply agree to attempt to cooperate, leaving out specific details of that cooperation, and then follow that original “framework” agreement with protocols and other implementation agreements later. The current international work to address climate change is an example of this style of environmental cooperation: after agreeing to the United Nations Framework Convention on Climate Change, states attempted to implement its goals through the Kyoto Protocol and other bilateral agreements. This approach is more sensitive to the special issues of sovereignty involved in international environmental agreements.

### **Scientific Uncertainty**

According to Schwabach, another reason that states have been reluctant to sign “one-time solution” agreements, instead of the agreeing to agree and following up with later implementation agreements was the presence uncertainty: uncertainty about the physical dimensions of the problem, uncertainty about technological advances, and uncertainty about changes in producer and consumer behavior.<sup>26</sup> Within the Rational Design framework, these types of uncertainty are characterized as “uncertainty about the state of the world:” uncertainty that could significantly affect the distribution of costs and benefits to cooperation for each state

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<sup>23</sup> Swanson and Johnston 1999, 90.

<sup>24</sup> Schwabach 2006, 28-29.

<sup>25</sup> Schwabach 2006, 29.

<sup>26</sup> Schwabach 2006, 28-29.

involved, yet cannot be fully known at the time of the agreement. Within the realm of environmental agreements, however “uncertainty about the state of the world” is often at least partially due to scientific uncertainty about environmental processes and effects. This is important because to a certain extent, unlike other types of uncertainty, such as the uncertainty surrounding the future actions of other states, this uncertainty can be at least partially resolved through scientific research and investigation.

Because in many cases when scientific uncertainty exists it adds to uncertainty about the state of the world, risk-averse states must design their agreements accordingly, but be prepared to adapt as more information becomes available. For this reason, scientific uncertainty can be used as a political stalling tool. The example of climate change is a good example of this. Although currently much information exists about the effects of climate change and the role of human activity, still there is uncertainty about the speed, intensity, and distribution of the effects of climate change.<sup>27</sup> Some negotiators are able to use this fact to delay an agreement until more information is available. Since some degree of scientific uncertainty is almost always present within environmental agreements, such a stalling tool can be effective for a long time. Furthermore, it is possible that more information about environmental issues could only deepen and complicate existing barriers to cooperation. Using climate change again as an example, more information about the distribution of the effects of climate change could severely aggravate the already severe distribution problems between states, as each state discovered that it would benefit, lose, or be unaffected by climate changes. In this case, scientific uncertainty might be a significant aid to cooperation, but some states, especially those who would have to bear the majority of the costs of the agreement—in this case the states of the North—have an incentive to press for answers the scientific answers before initiating cooperation. For these reasons,

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<sup>27</sup> Jurgielewicz 1996, 132-133.

scientific uncertainty within environmental agreements presents another unique strategic challenge to cooperation.

### **Unique Participation and Enforcement Challenges**

Environmental treaties are faced with unique challenges to participation. One challenge to participation is common to all public goods problems: the problem of the free rider. With the example of climate change, if one country, or group of countries, pays to try and control global climate change, the entire world will benefit from this action. Therefore, no country wants to be the one to take action and bear the costs of that action—thus, all actors have an incentive to wait for another actor to take action.<sup>28</sup> If left unaltered, this situation structure will lead to an equilibrium outcome where no one takes action and the public good is not provided or the environmental challenge remains unsolved. Therefore, to induce participation in environmental treaties attempting to provide public goods, like controlling climate change, states must create or alter incentives to participate.

Another participation problem facing many environmental treaties attempting to resolve global problems is that although a successful treaty may require the participation of many if not all states, multilateral negotiations are not only complicated, but they often impair substantive action by diluting the terms and obligations of the treaty. As Swanson and Johnston describe the phenomenon, “the irony of the situation is that the solution of the problem requires agreement, but agreement seems to require that the problem go unsolved.”<sup>29</sup> Furthermore, because these treaties are multilateral and not bilateral, all the countries have an incentive to wait to be the last to sign and ratify it, thus delaying the time when they must assume the costs of participation.<sup>30</sup>

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<sup>28</sup> Swanson and Johnston 1999, 139.

<sup>29</sup> Swanson and Johnston 1999, 93.

<sup>30</sup> *Ibid.*, 139.

Yet even outside the realm of global or even large multilateral agreements, the nuances of the problem of environmental externalities pose significant challenges to agreement participation. In the case of externalities, these participation challenges are intertwined with special enforcement challenges. Ron Mitchell and Patricia Keilbach address this issue in their article, *Situation Structure and Institutional Design: Reciprocity, Coercion and Exchange*. In this article, Mitchell and Keilbach argue that because of the nature of externalities, environmental agreements attempting to mitigate them do not always have access to some methods of inducing enforcement, such as restricting membership, or responding to defection by reciprocal defection. For example, restricting polluters from membership to an institution designed to reduce the externality of water pollution, or increasing water pollution when other members do so are not available options to states attempting to enforce environmental agreements, as neither action would help either state achieve its goals of cooperation.<sup>31</sup>

However, Mitchell and Keilbach dig deeper into the nuances of externalities, distinguishing between symmetric externalities, where the states involved are both victims and perpetrators, and asymmetric externalities, where “upstream” states are perpetrators of the externality, and “downstream” states are either victims of, or just generally dissatisfied with, the externality.<sup>32</sup> They argue that whether or not the externality is symmetric or asymmetric affects the incentives for states to defect, and thus influences the design of the institutional response.<sup>33</sup>

While issue-specific reciprocity is often both a rational response to defection and an important enforcement mechanism used in other issues areas, reciprocity has limited utility in environmental agreements attempting to mitigate externalities. If the externality is symmetric, it is possible that reciprocity might be the preferred method of enforcement because it avoids

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<sup>31</sup> Mitchell and Keilbach 2001, 132.

<sup>32</sup> Mitchell and Keilbach 2001, 131.

<sup>33</sup> Ibid., 139.



confronting problems of distribution, but only if the negative effects of reciprocally violating the agreement can be targeted at the original violator.<sup>34</sup> However, if violating an agreement creates large harms “on a diffuse set of actors, as often occurs in environmental affairs, retaliatory noncompliance will be unlikely.”<sup>35</sup>

However, issue specific reciprocity does not work for asymmetric externalities because, according to Mitchell and Keilbach, “perpetrators receive no benefits if dissatisfied states cooperate, [which] means perpetrators have no reason to join. Second, perpetrators are not harmed if dissatisfied states defect...[which means] perpetrators who join have no reason to comply.”<sup>36</sup> For these reasons, when confronting asymmetric externalities, “states must expand institutional scope in ways that induce perpetrators to join while reassuring dissatisfied states that the perpetrators will comply.”<sup>37</sup> States can do so by “linking” the problem of the externality to other issues, and then either employing coercion or rewards to alter the incentives of polluting states.<sup>38</sup>

Yet Mitchell and Keilbach go even further in their analysis, illustrating that when confronting asymmetric externalities, whether or not states use coercion or rewards when they extend an agreements scope “depends on the relative power of the perpetrator.”<sup>39</sup> While in situations when the victims of an asymmetric externality are more powerful than the perpetrators, the victims could just threaten the perpetrators to address the externality, yet weak victims are forced to choose between offering rewards to the perpetrators or “suffering what they must.”<sup>40</sup> This situation structure makes mitigating some externalities very difficult, since, as will be

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<sup>34</sup> Ibid., 140

<sup>35</sup> Ibid., 141

<sup>36</sup> Ibid., 142

<sup>37</sup> Ibid., 142

<sup>38</sup> Ibid., 142, 156.

<sup>39</sup> Mitchell and Keilbach 2001, 142.

<sup>40</sup> Ibid., 142-143.

discussed later, many perpetrators of global externalities are powerful states, and many victims are weak, with little to offer in terms of rewards.

## **Two-Level Games**

Yet another difficulty facing environmental treaties is the presence of two-level games. While most international treaties are negotiated on the state level, with the states as bargaining agents, state (as a conceptual whole) is not always the only actor involved in the activities relevant to the treaty. The other actors—which may be citizens, the legislative body or special interests of a nation, a corporation or another relevant organization—all have incentives that would affect the ultimate outcome of the treaty as well. According to Putnam, the dilemma is that “central decision-makers (‘the state’) must be concerned simultaneously with domestic and international pressures.”<sup>41</sup> Because of the nature of these two-level games, what might be a rational course of action for a national political leader in the international game might not be rational in the domestic level of the game, yet leaders ultimately need to satisfy both for the agreement to succeed.<sup>42</sup>

Two-level games can be a significant barrier to cooperation while actually negotiating and concluding the treaty, or they can be barriers to the treaty’s ultimate effectiveness. However, in some cases, the presence of a two-level game might also be beneficial by giving state negotiators more leverage or political will to create substantive environmental agreements. In any of those cases, however, two-level games significantly add to the complexity of the process.

Robert Putnam is one scholar who argues for the importance of two-level games in international relations by analyzing the role two-level games have in the negotiation and ratification process. Putnam criticizes paradigms that evaluate “state strength” as a key

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<sup>41</sup> Putnam 1988, 431.

<sup>42</sup> Putnam 1988, 434.

determinant in foreign policy or that focus too intently on the unitary actor model because they implicitly assume that the governing coalition does not matter, since states have the same strength no matter who is running them.<sup>43</sup> Putnam argues that such a focus is not useful, since “state strength” or unitary actor models are ill-suited to explain changes over time, since “state structures” stay relatively the same.<sup>44</sup> Putnam also argues that even without considering legislative bodies or other domestic interests, there is rarely consensus within the executive branch of a country as to what course of action is in the “national interest.”<sup>45</sup>

Instead, Putnam argues for the importance of “win-sets,” the set of possible agreements which “gain the necessary support among constituents” to be ratified by the country negotiating the agreement (Putnam is careful to clarify that this does not just hold true for democracies, but “constituents” or “votes” could be classified as any other sort of institutional interest, such as the military).<sup>46</sup> He argues that concluding international agreements depends on finding a treaty which will satisfy the win-sets of both countries, and thus ultimately be ratified by both.

Because of the complexity of the domestic facet of negotiation, Putnam also makes an important distinction between “voluntary” and “involuntary” defection during the process of a two-level game (by “defection” he refers not to an action of disobeying the treaty after it has been signed, but rather of negotiating a treaty which is then not ratified).<sup>47</sup> “Voluntary” defection refers to a situation when a state rejects an offer or a negotiated treaty because the negotiator does not agree with its terms. “Involuntary” defection, however, is when a state rejects or refuses to ratify a treaty not because it does not agree with the terms, but because it does not satisfy domestic interests. Because of the possibility of an involuntary defection after a

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<sup>43</sup> Ibid., 437.

<sup>44</sup> Ibid., 434.

<sup>45</sup> Ibid., 432.

<sup>46</sup> Putnam 1988, 437.

<sup>47</sup> Ibid., 438-439.

negotiation, “in any two-level game, the credibility of official commitment may be low, even if the reputational effects of renegeing may be high, for the negotiator may be unable to guarantee ratification.”<sup>48</sup>

However, the reason this reality is especially significant during negotiations is because the size of each country’s win-set—the amount of different agreements that would be accepted domestically—affects the distribution of gains from the cooperation. However, because negotiators of international agreements are often “badly misinformed” about domestic politics abroad, states have an incentive to misrepresent the size of their domestic win-sets in order to reach an agreement that is more favorable to their state.<sup>49</sup> States can do so by camouflaging voluntary defection as involuntary, saying things like, “I would love to concede that point, but my electorate would never approve it if I did.”<sup>50</sup> While this is a bargaining advantage for states with powerful domestic interests, like the United States, it limits the scope of cooperation, and thus, the possibility for agreement.<sup>51</sup> As Putnam describes, “the smaller the win-sets, the greater the risk of involuntary defection, and hence the more applicable the literature about dilemmas of collective action.”<sup>52</sup> In environmental agreements where the participation of many states is required, this misrepresentation of win-sets could actually prevent successful cooperation.

The process of constructing win-sets can also become interactive if the issue is politicized. If an issue is politicized and in the public eye, domestic attention can either shrink or expand the size of the win-set, depending on whether or not there are differences in domestic opinion. If there are domestic differences, negotiation can initiate what Putnam terms “suasive reverberation,” when “messages from abroad can change minds, move the undecided, and

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<sup>48</sup> Ibid., 439.

<sup>49</sup> Ibid., 439-440, 452-453.

<sup>50</sup> Putnam 1988, 438.

<sup>51</sup> Ibid., 448.

<sup>52</sup> Ibid., 439.

hearten those in the domestic minority.”<sup>53</sup> This has been especially apparent in the climate change debate, as international statements and action have motivated some cities and other politicians in the domestic minority to attempt to comply with Kyoto Protocol despite the refusal of the United States government to sign the agreement.

Politicization can also change incentives for politicians and negotiators of agreements. Putnam describes how concluding an agreement brings “transaction benefits” in terms of domestic support for leaders, and leaders have an incentive to help each other gain approval domestically. Because of this incentive, leaders sometimes cooperate weakly so as to reap the transaction benefits while avoiding the transaction costs. Putnam’s prime example of this is the Western summit, which place “greater emphasis on publicity than on substance.”<sup>54</sup>

It could be argued that the historical lack of international action to address climate change, as well as other environmental issues, is the incentive structure for politicians. While climate change (and other environmental issues) are important long term issues, other political actions have much higher potential to advance their career, and not as many risks. A politician who negotiates a climate change treaty will have to bear the costs of such an agreement almost instantly, while the benefits will not be readily apparent until much later—probably, at least in the case of the heads of democratic states at least—until well after they have left their positions. While some organizations have tried to alter the incentives for politicians to address climate change by mobilizing public opinion, multinationals of oil, gas, cars, and chemicals have influence and employ public relations agents to convince people that climate change does not

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<sup>53</sup> Ibid., 452.

<sup>54</sup> Putnam 1988, 452.

exist or is not a threat.<sup>55</sup> This battle constantly creates an unpredictable political climate for politicians.

Yet two-level games are not confined to the negotiation and ratification stage, but rather are also often present in the enforcement and compliance stage of the agreement, especially in the case of international environmental agreements. These two-level games are usually between the government and its citizens, or the government and industry. I like to think of these specific types of two-level games as problems of “limited influence.” In these games, while the government may intend to comply with an agreement, it cannot guarantee compliance because actors at the domestic level have incentives to defect.

James Morrow examines an example of this type of two-level game in Prisoner of War treaties. As Morrow describes, “an effective agreement on POWs must operate on the individual level as well as on the state level,” since a prisoner’s greatest risk of death is before it reaches the enemy camp, in the hands of one individual soldier during the act of surrender.<sup>56</sup> As Morrow further elaborates, “upholding treatment standards is costly for the detaining power, so it is tempting for states to cheat.”<sup>57</sup> This incentive structure often occurs within environmental agreements. One example of this would be an environmental treaty which prescribes that a Central American country protect its rainforests in exchange for technology. While the country’s government may attempt to enforce such an agreement, peasants without land or food have an incentive to cut down the rainforest to grow crops, and small businessmen have an incentive to log the forests for lucrative timber.

Two-level game problems are a key barrier to the effectiveness in many environmental agreements, as well as human rights agreements, and serve to obscure whether or not a state is

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<sup>55</sup> Carley and Spapens 1998.

<sup>56</sup> Morrow 2001, 216.

<sup>57</sup> Morrow 2001, 219.

complying with an agreement. After all, states could claim to have little influence over its domestic actors, yet really endorse what they are doing, or be legitimately attempting to enforce the agreement, with only limited success.

### ***Why the North-South Divide Deserves Special Attention***

While the special considerations for sovereignty, the scientific uncertainty, the unique participation and enforcement challenges, and the two-level games present in environmental treaties make them worthy of special attention within the study of international cooperation, the implications of the vast disparities between the countries of the North and the countries of the South are equally deserving of special attention within the realm of environmental cooperation. As more and more international environmental challenges require global cooperation in order to be effective, bridging the North-South divide—a divide that is not only a political divide, but one of power, amount of pollution, influence, living standards and ideology—may well become the crucial factor which decides whether or not environmental cooperation is successful. Yet bridging the divide requires confronting several factors that significantly exacerbate already challenging barriers to cooperation.

### **Extreme Asymmetry of Power, Pollution and Living Standards**

According to John Vogler, any institution meant to govern the global commons must take into account “an international political and economic system marked by extreme inequalities and which the relationship between developed market economies and less developed countries (LDCs) is often more one of dominance and dependence than interdependence.”<sup>58</sup> Indeed, the military, economic, and political power of the Northern countries towers over those of the South.

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<sup>58</sup> Vogler 1995, 14-15.

Economically, besides lacking the market influence the North has, the countries of the South are also restricted by significant amounts of debt from the International Monetary Fund and the World Bank from money that was lend to them in order to carry out “structural adjustment” programs. While these programs have now been condemned for increasing poverty and environmental degradation in many countries of the South, the debt these countries have from structural adjustment programs remain, and those countries need to earn money to pay off their debts.<sup>59</sup> Furthermore, the structure of the global market favors the economies of the North over those of the South. For example, many countries of the South that export luxury crops, like sugar or coffee, have a strong dependence on market fluctuations. Furthermore, agricultural protectionism by the countries of the Organization for Economic Co-operation and Development (OECD) limits other agricultural opportunities for these countries to free themselves from their debt to the IMF and the World Bank.<sup>60</sup>

Yet besides an asymmetry of political, economic, and military power, there also exists an asymmetry of pollution and the use of natural resources between these two groups of states. While which group of states are “upstream” and “downstream” often varies by issue area—within the issue of biodiversity, for example, Northern states are often considered “downstream,” since most of the world’s biodiversity is concentrated the tropics and could be lucratively exploited for economic gain by Southern countries—Northern countries, in general, have economies based on industrial operations, and as such, they generate the vast majority of global air and water pollution, as well as many substances responsible for anthropogenic climate change. This asymmetry of pollution is significant because, according to Mitchell and Keilbach, “asymmetric situations create greater enforcement problems precisely because they involve

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<sup>59</sup> Vandermeer and Perfecto 2005.

<sup>60</sup> Devia 1997.



unidirectional dependence rather than reciprocal interdependence.”<sup>61</sup> Furthermore, the North has many more resources that enable it to isolate itself (at least in the short term) from the effects of many forms of pollution, but climate change especially. By contrast, the countries of the South depend much more immediately on agriculture and other methods of harvesting natural resources, and are much more vulnerable to and less able to adapt to the effects of environmental crises like soil depletion and climate change.

There is also a pronounced asymmetry of consumption and living standards. In Northern countries, most citizens do not worry about satisfying their basic needs, but rather about their relative level of consumption, unlike many citizens in Southern countries, who often lack access to clean water, access to adequate health care, food and other basic needs. Furthermore, the level of consumption in the North is unsustainable. If the entire world consumed and produced the quantity of goods that are already produced in the industrialized nations, the human race would need more or less ten times the resources that exist in all of the world—in other words, the world population would need another nine Earths.<sup>62</sup>

The asymmetry of consumption and living standards is becoming more salient at the moment because a significant amount of countries, especially in Asia, are industrializing at a rapid rate, and the world population continues to grow.<sup>63 64</sup> The combination of unsustainable consumption patterns and rapid industrialization by developing countries led the world to a moral, political, social, economic, and environmental conundrum right before the turn of the millennium: should world leaders steward the environment, leaving billions of people to extreme poverty, or overexploit the Earth’s resources, potentially crippling the Earth permanently and

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<sup>61</sup> Mitchell and Keilbach 2001, 136.

<sup>62</sup> Carley & Spapens 1998.

<sup>63</sup> Carley & Spapens 1998.

<sup>64</sup> Lyon Dahl, 1996.

compromising future generations ability to survive in order to elevate the standard of living for all the citizens of the world today?

In 1983, the World Commission on Environment and Development (the Brundtland Commission), attempted to resolve this conundrum with the concept of sustainable development, explained in their report, titled *Our Common Future*.<sup>65</sup> The concept of sustainable development is development that meets the needs of the present generation without sacrificing the ability of future generations to meet their own needs.<sup>66</sup> However, the implementation of sustainable development has been much more elusive than its ideological foundation—even today, no good example of sustainable development exists, because the “developed” countries industrialized in an unsustainable way.<sup>67</sup> This fact has led to the realization that world consumption patterns must be altered. The subsequent question, however, “who is going to decrease or restrict their level of consumption and pollution?” presents a severe distribution problem.

### **Dueling Ideologies**

Complicating this distribution problem are dueling ideologies struggling for prominence in the codification of international laws and norms. Any answer to the question of who should bear the costs of environmental protection—whether they be costs incurred by restricting production, restricting consumption, paying for new technologies, or whatever other measures become necessary—is inextricably linked with an inevitably controversial rationale of *why* any such entity should pay those costs. While the answer to “who will pay what” may be the most politically important in the short term, the answer to “*why* such-and-such country should and will

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<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> Lyon Dahl 1996.

pay such-and-such” amount will most likely have a much longer lasting effects on international environmental cooperation.

An interesting example of this ideological clash is illustrated in Duncan French’s “Developing States and International Law: The Importance of Differentiated Responsibilities.”<sup>68</sup> French describes the conflict over the wording Principle 7 of the Rio Declaration, an agreement that is not legally binding, but ideologically significant in determining international legal norms. The debate centered on the legal responsibility of developed states for past environmental damage, sometimes referred to as the concept of “ecological debt.”

The concept of ecological debt is based on the fact that many of the ecological problems that exist today are linked to the historical and economic processes of the development and industrialization of the North. Much of the environmental impacts that are now “passing safe thresholds” have accumulated since England’s industrial revolution.<sup>69</sup> Because of this, many countries of the South which are now industrializing, like China, are of the opinion that this historic monopolization of the Earth’s ability to absorb pollution and use of natural resources by the developed countries constitutes an ecological debt that they owe the world, through the transfer of funds or technology.<sup>70</sup> In an attempt to codify this ideology, the G77 group of developing states proposed the following wording for Principle 7:

“In view of their main historical and current responsibility for global environmental degradation and their capability to address this common concern, *developed countries shall provide* adequate, new and additional financial resources and environmentally

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<sup>68</sup> French 2000.

<sup>69</sup> Carley & Spapens 1998.

<sup>70</sup> Carley & Spapens 1998.

sound technologies on preference and concessional terms to developing countries to enable them to achieve sustainable development.”<sup>71</sup> (Emphasis added)

This wording would make Northern countries legally responsible for historical damage, and technological and financial assistance imperative. The use of the phrase “shall provide” is also strong prescriptive wording.

The above Principle 7 as proposed by the G77, however, was not the agreed upon text. Northern countries disagreed with the notion of legal responsibility for past actions, and asserted that the different responsibilities of the North and South should be based on future responsibility for achieving sustainable development:

“The developed countries acknowledge the responsibility they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.”<sup>72</sup>

Even though the agreement was not binding, the United States was still concerned about the wording of even this version of the final Principle 7 and so issued an interpretive statement asserting that the principle did not absolve developing countries from ecological responsibility, but acknowledged a special leadership role for developed countries because of their resources.<sup>73</sup>

The attention paid to agreements that are admittedly “only” ideological highlights the gravity with which the environmental concerns within the context of the North-South divide are addressed in the international arena.

## **Hypotheses**

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<sup>71</sup> French 2000, 36.

<sup>72</sup> French 2000, 36.

<sup>73</sup> Ibid., 37.

Because of the potential of the North-South divide to significantly exacerbate cooperation problems, especially distribution problems, enforcement problems, and uncertainty about preferences, following the logic of the Rational Design framework, there should be significant differences in the design of treaties that are exclusively between Northern countries, treaties that are exclusively between Southern countries, and treaties that are between both countries of the North and countries of the South.

With this basic assumption, it is possible to formulate some basic hypotheses about the design differences that should be present between groups given the strategic cooperation problems each group faces. Below are the hypotheses I will attempt to test in this study:

**Hypothesis 1: There will be few, if any South/South agreements.**

Because of the vast quality living standards and low per capita gross national income, Southern countries have many more immediate, domestic human concerns to confront than spend precious resources on the transaction costs associated with negotiating environmental agreements with few prospects of receiving the economic or technological benefits that would be possible in an agreement with Northern countries.

**Hypothesis 2: North/South agreements will be relatively inflexible, while North/North agreements will be relatively flexible.**

Mitchell and Keilbach assert that states use flexibility in agreements if it allows them to win short-term benefits while avoiding long-term risks, however, in situations where gains from cooperation require both sides to execute the exact terms of the agreement, flexibility is not a

welcome tool.<sup>74</sup> Following this logic, because of the asymmetric nature of the North/South relationship as well as widespread skepticism and uncertainty about preferences, North/South agreements can be expected to be inflexible. North/North agreements, on the other hand, because they have the resources to bear the transaction costs associated with increased flexibility, should be expected to be flexible in order to counter uncertainty about the state about the world and the arrival of new scientific knowledge.

**Hypothesis 3: North/North agreements will be relatively narrow in scope, while North/South agreements will be wide, linking to other issues.**

Because of the asymmetry of the externalities many North/South agreements would attempt to address this asymmetry by widening the scope of the agreement in order to alter the incentive structure, as described by Mitchell and Keilbach.<sup>75</sup> This hypothesis is also based on the rationale behind the Rational Design conjecture “scope increases with the severity of the distribution problem.”<sup>76</sup> Because many North/North agreements are characterized by symmetric externalities, issue-specific reciprocity will most likely be an option, and thus a narrower scope can be expected relative to the North/South agreements.

**Hypothesis 4: North/South agreements will use some type of inducements to compliance (either coercion or rewards).**

This hypothesis follows logically from hypothesis three, which anticipates wider scopes for North/South agreements. Once again, because of the asymmetric relationship between the

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<sup>74</sup> Mitchell and Keilbach 2001, 157.

<sup>75</sup> Ibid., 137.

<sup>76</sup> Koremenos, Lipson, and Snidal 2001, 26.

North and the South, which aggravates enforcement problems, some sort of coercion or exchange should be expected in order to induce compliance from contracting states.

**Hypothesis 5: North/North agreements will rely on mainly decentralized compliance monitoring, such as self-reporting or a fire alarm system, while North/South agreements will rely mainly on centralized compliance monitoring, such as a Police Patrol.**

Because Northern countries are linked by strong trade ties and are also significantly more powerful than Southern countries, they will be less likely to submit themselves to compliance monitoring by a centralized body, and will instead rely on decentralized mechanisms that will allow each state to report each other. In contrast, North/South agreements, will defer to centralized compliance monitoring because of the large degree of mistrust regarding environmental agreements between the North and the South, as well as limited resources of many countries of the South to individually monitor other countries.

**Hypothesis 6: Non-state actors should be heavily involved in North/South agreements.**

Because of the combination of high levels of distrust between Northern and Southern countries, as well as the need for trustworthy independent monitors and unbiased scientific research to confront scientific uncertainty, non-state actors should be expected to be very involved in North/South agreements.

**Hypothesis 7: North/North agreements will be characterized by restrictive membership.**

Because membership within environmental treaties is dependent on the nature of the environmental issue, and many externalities are symmetric among countries of the North, it can

be expected that North/North agreements will be characterized by restrictive membership, perhaps using established political connections to complete agreements with close trade partners.

### **Descriptive Research Questions**

Besides these specific hypotheses, I will also attempt to answer the following descriptive questions about the sample:

- Is there a difference in the complexity of the cooperation problems addressed in each of the three groups?
- Is there a difference between the use of hard law and soft law between the three groups?
- Is there a difference between the amount of precision between the three groups?
- Is there a difference in how symmetric/asymmetric agreements are between groups?
- Is there a difference between whether or not domestic legislation is required between groups?

## **Methodology**

In an attempt not only to test these hypotheses but to answer these descriptive research questions, this study employs a quantitative analysis of a random sample of twenty-four environmental treaties from the United Nations Treaty Series (UNTS), as part of the Professor Barbara Koremenos' National Science Foundation sponsored project on the Continent of International Law. The United Nations Treaty Series is a collection of all the international agreements registered with the United Nations Secretariat since World War II until December 1986, with some agreements from earlier. The sample was chosen from a random ordering of all the environmental treaties in the UNTS. This unbiased sample will allow for scientific and systematic analysis of the patterns of treaty design. Within the sample, treaties were classified as



into one of three categories depending on the countries that have ratified or acceded to the treaty: treaties in which the parties are exclusively Northern states (North/North treaties), treaties in which the parties are exclusively Southern states (South/South treaties), and treaties in which the parties are both Northern and Southern states (North/South treaties). These groups are analyzed as independent variables, since, following the logic of Rational Design theory, the different challenges each group presents should result in different patterns of treaty design.

The dependent variables for the random sample were the specific design features of each agreement, such as articles prohibiting reservations or compliance monitoring provisions. Each of these agreements were coded separately by two independent coders. After each completed the coding separately, the different coding protocols were compared. Any differences between the two codings were discussed, and a final decision was reached by Professor Barbara Koremenos.

### ***Defining the North/South Distinction***

By far the most difficult variable to operationalize was the distinction between “North” and “South” within the random sample. The terms “developed” and “developing,” as well as “North” and “South,” are often used in political discussions as general, blanket terms; however, when it comes to operationalizing these concepts, there is little agreement among sources. While the United Nations addresses the concept of developed and developing in many of its publications, “there is no established convention for the designation of ‘developed’ and ‘developing’ countries within the United Nations system.”<sup>77</sup> Much of the uncertainty and debate stems from the ambiguity of the concept of development: is it per capita GNP? Is it quality of life? Is it industrialization? In an attempt to accommodate all of these different characterizations of development, as well as eliminate any bias arising from favoring one particular interpretation

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<sup>77</sup> United Nations. Standard country or Area Codes for Statistical Use.

over another, I cross-checked each treaty in the sample with several different measures to determine how to classify it.

Since one traditional view of development is economic wealth per capita, the first classification tool I used was the World Bank's country classification table, which ranks countries by gross national income (GNI) per capita.<sup>78</sup> Using this classification, countries classified as high-income and members of the Organization for Economic Cooperation and Development were considered Northern, while any other countries were considered Southern. Using the distinction of countries that were high income and members of OECD avoided the problem of including rich island countries that are highly dependent on the tourism industry, countries which, although they have high incomes, share many more interests with the countries of the South.

The second classification tool I used was the Human Development Index (HDI), a composite index created by the United Nations Development Programme (UNDP) combining a country's life expectancy at birth, its adult literacy rates and school enrollment levels, and its gross domestic product per capita. The Human Development Index was created to address not only the income or wealth of a country, but how much that wealth was invested into each country's citizens. This index avoids the pitfalls of relying simply on GNI per capita, which, especially in countries in which oil or tourism are the principle source of GNI, ignores the actual living conditions and opportunities within the country. The UNDP considers any country with an HDI of .800 or above to have a "high level of development," thus, any country with an HDI of .800 and above *at the time the treaty was signed* was considered a Northern country, while any country with less than .800 HDI was considered a Southern country. Because HDI information

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<sup>78</sup>United Nations: World Banks List of Economies. 2007

was only available as far back as 1975, agreements concluded earlier than 1975 used the 1975 values, assuming relative stasis for the country.

The third classification I cross-checked was the United Nations Conference on Trade and Development's (UNCTAD) 2005 Handbook of Statistics, which lists the economies it considers "developed."<sup>79</sup> The members of the G77 group of developing states were also considered when different classification tools contradicted each other, since joining the G77 is a political symbol of shared interests with countries of the South.

Surprisingly enough, there were few contradictions within the classification of treaties. In the large majority of treaties, using the World Bank classification, the Human Development Index, the UNCTAD classification and the G77 membership yielded concurring results. The exceptions, the treaties in which different measurements contradicted each other, were all treaties that involved the membership of an Eastern European country, or former members of the Soviet Union. Even though the Human Development Indexes of these countries were often below the established threshold for "high human development" and their incomes were not high enough to be considered "Northern" using the World Bank's data, for the purposes of this study, Eastern European countries were considered Northern countries for a several reasons: 1) many of them have an advanced industrial infrastructure and have followed a distinctly different development path from other Southern countries,<sup>80</sup> 2) the United Nations Conference on Trade and Development lists them among the few "developed" countries, and 3) these countries did not join the G-77, indirectly indicating that they do not perceive their interests to be in line with other countries of the South.

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<sup>79</sup> United Nations. 2005.

<sup>80</sup> Rudra 2002.

After the three groups have been established, the data from relevant agreement provisions was analyzed with cross-tab analysis, and the p-values for each provision were also calculated. When possible, correlation coefficients were also calculated. However, to control for the special circumstances of Eastern European countries and ensure that their unique situation did not skew the results of the quantitative analysis, the data was calculated twice for each provision: once, including all of the treaties, and a second time, excluding the six treaties involving Eastern European countries that had contradictory classifications.

## **Results**

While the quantitative results of the sample are only statistically significant in a few instances, the distribution of treaties and provisions within the treaties is significant enough in places to pique interest in asking similar questions with a large sample size. Because of this lack of statistical significance, hypotheses can neither be proven, nor completely disregarded.

### **Hypothesis 1: South/South Agreements**

Hypothesis 1 stated that there would be few, if any South/South agreements. This hypothesis was validated by the sample. Of the twenty-four random agreements studied, only one of them could be classified as South/South. Furthermore, the agreement was between Argentina and Chile, two of the wealthier and arguably more “developed” Southern countries.

### **Hypothesis 2: Flexibility**

Hypothesis 2 stated that North/South agreements will be relatively inflexible, while North/North agreements will be relatively flexible. The presence (or, inversely, the absence) of several provisions were examined to determine the flexibility or rigidity of each type of cooperation: “opt out” provisions, renegotiation or modification provisions, amendment provisions, escape clauses, and provisions prohibiting reservations. None of the provisions varied predictably enough within each cooperation group enough to be statistically significant, so largely this dataset failed to reject the null hypothesis, that there is no systematic variation in flexibility between North/North cooperation and North/South cooperation. However, what the sample does seem to support is that there is little flexibility within environmental agreements in general.

The tables below represent the spread of agreements with “opt out” provisions, provisions which let parties to the agreement decide not to be bound by other specific provisions within the treaty.

Does the agreement contain certain provisions that members are not obligated to sign or comply with (an opt out clause)? <i>(Complete Sample)</i>		
	Yes	No
North/South	1	8
North/North	0	14
<b>p-value: .202</b> <b>Correlation coefficient: -.6363</b>		

Does the agreement contain certain provisions that members are not obligated to sign or comply with (an opt out clause)? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	1	7
North/North	0	9
<b>p-value: .274</b> <b>Correlation coefficient: -.5625</b>		

As is evident above, none of the environmental treaties had opt out clauses except for one, a multilateral North/South agreement, the International Convention for the Conservation of Atlantic Tunas. The opt out clause in this agreement allowed states to not be bound by binding recommendations of the treaty’s internal body if they object to them within a designated period.

The next provision examined was the renegotiation, or modification provision, which stipulates a process for the modification of the treaty. The following are the results for this specific provision.

Does the agreement have a renegotiation or modification provision? <i>(Complete Sample)</i>		
	Yes	No
North/South	2	7
North/North	3	11
<b>p-value: .964</b> <b>Correlation coefficient: -.0111</b>		

Does the agreement have a renegotiation or modification provision? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	2	6
North/North	3	6
<b>p-value: .707</b> <b>Correlation coefficient: .1000</b>		

While these results are especially statistically *insignificant* with regards to the differences between North/North and North/South cooperation, it is interesting to note that the statistical significance of that difference increased by more than twenty-five percent after the exclusion of the Eastern European countries with this particular provision. Furthermore, it is curious that a little over one fifth of the entire sample had renegotiation provisions.

Another measure of institutional flexibility is the ability to amend an agreement, and the presence of amendment provisions within the three cooperation groups is displayed below.

Is there an amendment provision? <i>(Complete Sample)</i>		
	Yes	No
North/South	4	5
North/North	5	9
<b>p-value: .675</b> <b>Correlation coefficient: -.0873</b>		

Is there an amendment provision? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	3	5
North/North	2	7
<b>p-value: .490</b> <b>Correlation coefficient: -.1833</b>		

Like those of the negotiation provisions discussed above, these p-values are statistically insignificant, but once again, that significance improved by over twenty-five percent when the agreements that focus on Eastern European countries are excluded. It is also interesting to note that a higher proportion of North/South agreements had amendment provisions than North/North agreements. This would seem to (tentatively) suggest the opposite from my hypothesis, that North/South treaties are more flexible than North/North treaties.



Escape clauses also provide flexibility, since escape clauses allow participants to “escape” from the agreement temporarily under extenuating circumstances, then rejoin afterwards without penalty. The results for escape clauses are found below.

Does the agreement contain an escape clause? <i>(Complete Sample)</i>		
	Yes	No
North/South	1	8
North/North	0	14
<b>p-value: .202</b> <b>Correlation coefficient: -.6363</b>		

Does the agreement contain an escape clause? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	1	7
North/North	0	9
<b>p-value: .274</b> <b>Correlation coefficient: -.5625</b>		

Generalizing from the above tables, it would seem that environmental treaties do not use escape clauses often. The one agreement that does contain an escape clause was a multilateral, North/South agreement, the International Convention for the Prevention of Pollution of the Sea by Oil. The agreement prescribes where vessels can get rid of oil and other damaging substances within the sea. The escape clause within this particular agreement gives states the ability to suspend its compliance with the amendment in the case of war.

While the presence of amendment provisions, escape clauses, opt out clauses and renegotiation provisions are examples of flexibility, the presence of a provision prohibiting reservations marks a more rigid treaty which does not allow states to object to parts of the agreement and still be a participant. The results for provisions prohibiting reservations are illustrated in the tables on the next page.

Is there a provision prohibiting reservations? <i>(Complete Sample)</i>		
	Yes	No
North/South	1	8
North/North	0	14
<b>p-value: .202</b> <b>Correlation coefficient: -.6363</b>		

Is there a provision prohibiting reservations? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	1	7
North/North	0	9
<b>p-value: .274</b> <b>Correlation coefficient: -.5625</b>		

Like escape clauses, the evidence seems to suggest that provisions prohibiting reservations are not common among environmental treaties, since only one treaty had a provision prohibiting reservations. That treaty was a multilateral, North/South treaty: the Convention on Fishing and Conservation of the Living Resources of the High Seas.

### **Hypothesis 3: Scope**

Hypothesis 3 stated that North/North agreements will be relatively narrow in scope, while North/South agreements will be wide, linking to other issues. Surprisingly, only one agreement was coded as being “multi-issue.” This agreement was a bilateral North/South agreement, between one of the richest countries in the world, the Federal Republic of Germany, and one of the poorest, Sierra Leone. Only one other agreement in the sample, one between the United States and Sudan, is a bilateral agreement that crosses such a great wealth divide. Furthermore, the p-values for both samples, while not statistically significant, are not so high as to be dismissed, given the small sample size. Thus, evaluating this hypothesis fully will require more thorough empirical testing, with a larger sample size.

Is this a one-issue agreement or a multi-issue agreement? <i>(Complete Sample)</i>		
	One-Issue	Multi-Issue
North/South	8	1
North/North	14	0
<p><b>p-value: .202</b>  <b>Correlation coefficient: -.6363</b></p>		

Is this a one-issue agreement or a multi-issue agreement? <i>(Exclusive Sample)</i>		
	One-Issue	Multi-Issue
North/South	7	1
North/North	9	0
<p><b>p-value: .274</b>  <b>Correlation coefficient: -.5625</b></p>		

#### **Hypothesis 4: Inducements to Compliance**

Hypothesis 4 stated that North/South agreements will use some type of inducements to compliance, either coercion or rewards. The tables on the next page describe whether or not agreements established inducements to compliance. While it is not statistically significant, these p-values are relatively lower than many others in this study, and a larger proportion of North/South agreements used inducements to compliance. Furthermore, it is interesting to note that none of the agreements that focused on countries of Eastern Europe established inducements to compliance.

Does the agreement establish inducements to compliance? <i>(Complete Sample)</i>		
	Yes	No
North/South	3	6
North/North	1	13
<b>p-value: .106</b> <b>Correlation coefficient: -.4342</b>		

Does the agreement establish inducements to compliance? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	3	5
North/North	1	8
<b>p-value: .200</b> <b>Correlation coefficient: -.3653</b>		

Only one agreement, however, clearly stipulated which inducements to compliance would be used, and those were punishments, in the International Convention for Prevention of the Sea by Oil, the multilateral North/South agreement discussed earlier as the only agreement with an escape clause. In another treaty, the Convention on Fishing and Conservation of the Living Resources of the High Seas, another multilateral North/South agreement also discussed earlier as the only agreement prohibiting reservations, signatories found to be non-compliant were simply told they must comply but not punished. While nothing can conclusively be gained from this limited result, the results nonetheless tentatively support this hypothesis.

### **Hypothesis 5: Monitoring**

Hypothesis 5 states that North/North agreements will rely on mainly decentralized compliance monitoring, such as self-reporting or a fire alarm system, while North/South agreements will rely mainly on centralized compliance monitoring, such as a Police Patrol. The following table first examines the existence of systems of compliance monitoring within the samples. While there are not significant differences between the two types of cooperation, it is

interesting to note that a larger proportion of the environmental treaties in both samples did not call for a system of compliance monitoring.

Does the agreement call for a system of compliance monitoring? <i>(Complete Sample)</i>		
	Yes	No
North/South	4	5
North/North	4	10
<b>p-value: .435</b> <b>Correlation coefficient: -.1666</b>		

Does the agreement call for a system of compliance monitoring? <i>(Exclusive Sample)</i>		
	Yes	No
North/South	3	5
North/North	2	7
<b>p-value: .490</b> <b>Correlation coefficient: -.1833</b>		

The next table, on the following page, examines whether there is a difference in when monitoring occurs—on a regular basis, such as with a “police patrol” or with “self-reporting,” or when there are allegations of noncompliance. Not only is this data not significant, but contrary to most other provisions, the significance of the data *declined* by over fifty percent after the exclusion of the Eastern European country treaties.

Does monitoring occur on a regular basis, only when there are allegations of non-compliance, or both? <i>(Complete Sample)</i>			
	Regular Basis	Only With Allegations	Both
North/South	2	0	2
North/North	3	0	1
<b>p-value: .465</b>			

Does monitoring occur on a regular basis, only when there are allegations of non-compliance, or both? <i>(Exclusive Sample)</i>			
	Regular Basis	Only With Allegations	Both
North/South	1	0	2
North/North	1	0	1
<b>p-value: .709</b>			

However, while there is almost no significant difference between types of cooperation in *when* monitoring takes place, there is a *statistically significant* difference within the exclusive sample between the use of self-reporting and an internal body to determine compliance. The results are in the tables on the next page.

Who gathers and reports the data from which compliance/non-compliance is determined? <i>(Complete Sample)</i>		
	Self-Reporting by Members	An Internal Body
North/South	4	0
North/North	1	1
<b>p-value: .121</b>		

Who gathers and reports the data from which compliance/non-compliance is determined? <i>(Exclusive Sample)</i>		
	Self-Reporting by Members	An Internal Body
North/South	3	0
North/North	0	1
<b>p-value: .046</b>		

According to this data, North/South agreements use self-reporting by members exclusively, while North/North treaties are more likely to use an internal body. This is exactly the opposite of my hypothesis: instead of North/South agreements using centralized monitoring and North/North agreements using decentralized monitoring, North/South agreements are using overwhelmingly decentralized monitoring while the North/North agreement uses centralized monitoring.

### **Hypothesis 6: Non-state Actors**

Hypothesis 6 stated that Non-state actors should be heavily involved in North/South agreements. Surprisingly, however, within both of these samples non-states actors were not involved. In only one agreement, the multilateral North/South Convention on long-range transboundary air pollution, were non-state actors allowed to become members of the agreement. Yet even more surprising was the fact that no agreements in the sample employed pre-existing

intergovernmental organizations or non-governmental organizations to determine whether or not states were complying with the agreement.

### Hypothesis 7: Membership

Hypothesis 7 stated that North/North agreements will be characterized by restrictive membership. Below are tables showing membership criteria for both samples. Indeed, according to the data, North/North agreements are more restrictive in their criteria—no North/North agreements were simply open to all states without different categories of membership.

Is membership open to all states or only to those that meet certain criteria? <i>(Complete Sample)</i>			
	Only Those that Meet Criteria	Open to All States	Both: Different Categories of Membership
North/South	2	2	0
North/North	4	0	1
<b>p-value: .165</b>			

Is membership open to all states or only to those that meet certain criteria? <i>(Exclusive Sample)</i>			
	Only Those that Meet Criteria	Open to All States	Both: Different Categories of Membership
North/South	2	2	0
North/North	2	0	1
<b>p-value: .233</b>			

The table on the next page takes the analysis further and asks if there are different categories of membership within each type of cooperation.

Are there different categories of membership?

Are there different categories of membership?



<i>(Complete Sample)</i>		
	Yes	No
North/South	1	3
North/North	2	3
<b>p-value: .635</b> <b>Correlation coefficient: .1470</b>		

<i>(Exclusive Sample)</i>		
	Yes	No
North/South	1	3
North/North	2	1
<b>p-value: .270</b> <b>Correlation coefficient: .3653</b>		

While once again there is not a statistically significant difference between the two types of cooperation, the differences became fifty-seven percent more significant after the exclusion of the contradictory Eastern European treaties.

### **Descriptive Questions**

There was no significant difference between the level of complexity of the cooperation problems between North/North and North/South treaties. Neither was there a significant difference in the level of precision. All of the treaties in the sample were coded as hard law, with the exception of one North/North treaty, the Agreement for the protection of migratory birds and birds in danger of extinction and their environment, between Australia and Japan. All of the agreements were coded as “symmetric,” in terms of rights and responsibilities given by each agreement, with the exception of two North/North treaties.

There was one significant surprise, however, in the form of domestic legislation. The differences between how explicit an agreement was about domestic legislation were statistically significant between each type of cooperation, with p-values below .05, in both the complete and

exclusive tests of the sample, with North/South agreements being *more* explicit than North/North agreements. The results are in the tables below.

How explicit is the agreement about domestic legislation? ( <i>Complete Sample</i> )			
	Not at All Explicit	Some-what Explicit	Explicit
North/South	3	6	0
North/North	12	2	0
South/South	0	1	0
<b>p-value: .017</b>			

How explicit is the agreement about domestic legislation? ( <i>Exclusive Sample</i> )			
	Not at All Explicit	Some-what Explicit	Explicit
North/South	3	5	0
North/North	8	1	0
South/South	0	1	0
<b>p-value: .041</b>			

## Discussion

While the data from this analysis says (and does not say) many interesting things, there are three results that stand out among the rest: 1) the statistically significant difference between North/North treaties and North/South treaties in their use of centralized or decentralized compliance monitoring; 2) the statistically significant difference between the use of domestic legislation between North/North treaties and North/South treaties; and 3) the dramatic change in significance between the sample which included treaties focused on Eastern European countries and the sample that excluded them.

The rationale for my hypothesis that North/South treaties would use centralized monitoring was based on the idea that the lack of trust with regards to environmental treaties would make both sides distrustful of the other, which would lead to centralized monitoring. However, it is possible that that same mistrust would lead states to mistrust any internal body created by an agreement, especially, in the case of Southern countries, that internal body would most likely be staffed by nationals of Northern countries, the countries which would have the resources to staff such an internal body. Furthermore, Southern countries would be wary of internal bodies that could limit their sovereignty or development options. Northern countries, on the other hand, might feel more comfortable with an internal body monitoring compliance because it decreases the incentive for states to defect by misrepresenting their environmental data, since many are competitors for world trade, an area that is advantaged when environmental standards are ignored.

Besides surprising differences in the centralization of compliance monitoring, the statistically significant differences in the degree of explicitness with regards to domestic legislation were also an interesting findings. That North/South agreements were more explicit with regards to domestic legislation could mean that these agreements have a deeper level of cooperation, or perhaps less flexibility in the implementation of the treaties. More explicitly requiring domestic legislation may also be an attempt to confront two-level problems, binding the hands of the contracting governments to extending the reach of the agreement to the regulation of their citizens or their industries.

The third particularly interesting and relevant finding of this analysis was the difference in p-value between the analysis of the complete sample, which included several treaties involving Eastern European countries, and that of the exclusive sample, which excluded those

treaties and analyzed only those agreements that were clearly Northern or Southern according to multiple classification tools. Even though the sample size *decreased* by at least six treaties from the complete sample to the exclusive sample, the significance *increased* by eighteen percent on average, making the exclusive sample more significant despite its smaller size. Because Eastern European countries have had different development paths because of their membership in the former Soviet Union, their political interests and development paths are distinct, not coinciding with either the North or the South, and thus it makes sense to exclude them from such analyses.<sup>81</sup> The changes in p-value from one sample to the next gives support to the importance of continued research on the North/South divide.

### ***Limitations of the Study***

The most obvious limitation of this study is the sample size. Because of that sample size, the South was forced to be analyzed as one large conglomerate, although in terms of interests it can feasibly be divided into many more relevant subgroups of different and sometimes competing interests, such as oil-producing countries, island countries, or countries with tropical rainforests. The small sample size also prohibited as study of differences between environmental issue areas. As each environmental issue would pose distinct barriers to successful cooperation, the design features of agreements should be expected to differ across environmental issue areas.

Another limitation of this study was the time-span of the analyzed agreements. While using this random sample gives credibility and integrity to the data through a rigorous methodological process, it detracts from the analysis in another way, since many important binding environmental agreements were concluded after 1986. Furthermore, the area of international environmental agreements and environmental law is rapidly evolving, arguably

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<sup>81</sup> Rudra 2002.

much faster than other, more established issue areas like security and economics, and for that reason an analysis of earlier treaties might have only limited utility.

The sample also excludes treaties between states and international agents, such as the International Monetary Fund, the World Bank, and other organization that are important pieces of the environmental cooperation between North and South, and which shape the interactions between them.

Another limitation of this study was also not able to take into account the increasing role of multinational firms, which are quickly becoming a more significant force, and sometimes command more power than states. It also ignores changes in the subjective “framing” of political interests, or how groups come to perceive that their political goals are similar and related. While the concepts of “North” and “South” are currently discussed as coherent interest groups, these distinctions have not always been so politically salient. It could be argued that in a world divided between communism and capitalism, the idea of both the North and the South were lesser details in the context of the Cold War.

Finally, although their importance was acknowledged within the theory section, the importance of two-level games was not fully analyzed and is deserving of much more attention. Furthermore, two-level games cannot be completely analyzed without significant attention to community and national political movements, which attempt to alter the payoff matrices of the politicians negotiating such agreements. The presence or absence of such domestic political pressure can be expected to have significant effects on the negotiation process.

## ***Concluding Thoughts***

While this analysis has only scratched the surface of the intricacies of international environmental cooperation and the political difficulties of attempting to create international environmental agreements in the face of the great North/South divide, it has offered a glimpse of the hidden details yet to be discovered about global environmental cooperation, and with them, the keys to developing an effective environmental treaties and literally redefining the face of the Earth. As our world goes forth to face such formidable global environmental challenges as climate change, desertification, bioaccumulation, water scarcity and pollution among many others, such research will only become more important.

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## **Appendix: Treaty Sample and Classifications**

### **North/North**

Agreement on co-operation in the field of environmental protection (Sweden and German Democratic Republic, UNTS #20644)\*

Agreement on co-operation in the field of environmental protection (U.S.A. and Japan, UNTS #

Agreement on co-operation in the field of environmental protection (U.S.A. and Japan, UNTS #15109)

Community-COST Concertation Agreement on a concerted action project in the field of analysis of organic micropollutants in water (Multilateral, UNTS #20754)

Exchange of letters constituting an agreement concerning the free passage of salmon in Vanern Lake (Sweden and Norway, UNTS #14017)

Agreement for the protection of migratory birds and birds in danger of extinction and their environment (Australia and Japan, UNTS #20181)

Memorandum of Understanding on co-operation in earth sciences and environmental studies (United Kingdom of Great Britain and Northern Ireland, UNTS # 19699)

European Agreement on the restriction of the use of certain detergents in washing and cleaning products (Multilateral, UNTS #11210)

Agreement concerning co-operation in the matter of plant protection (Hungary and Austria, UNTS #6989)\*

Agreement for cooperation relating to the marine environment (Denmark and Canada, UNTS #22693)

Agreement on co-operation in the field of environmental protection (United Kingdom of Great Britain and Northern Ireland, UNTS #13920)\*

Agreement concerning the protection of the Sound Oresund from pollution (Denmark and Sweden, UNTS #13823)

African Migratory Locust Convention (Multilateral, UNTS #10476)

Convention on fishing and conservation of the living resources in the Baltic Sea and the Belts (Multilateral, UNTS #16710)\*

Convention on long-range transboundary air pollution (Multilateral, UNTS #21623)\*

## North/South

Agreement concerning financial co-operation – Refuse Disposal in the Freetown Metropolitan Area (Federal Republic of Germany and Sierra Leone, UNTS #21678)

Exchange of notes constituting an agreement on the project “Soil management and conservation East Amazonia”. (Brazil and Federal Republic of Germany, UNTS # 23031)

International Convention for the Prevention of Pollution of the Sea by Oil (Multilateral, UNTS #4714)

Agreement for plant protection – Sudan quelea bird research project (U.S.A. and Sudan, UNTS #17308)

Convention on Fishing and Conservation of the Living Resources of the High Seas (Multilateral, UNTS #8164)

Exchange of notes constituting an agreement concerning land use and soil conservation in the eastern Amazon region (Brazil and Federal Republic of Germany, UNTS #17973)

Agreement on plant protection and phytosanitary quarantine (Bulgaria and United Arab Republic, UNTS #9963)\*

Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere (Multilateral, UNTS #485)

International Convention on Civil Liability for Oil Pollution Damage (Multilateral, UNTS #14097)

International Convention for the Conservation of Atlantic Tunas (Multilateral, UNTS #9587)

## South/South

Agreement concerning the protection of frontier forests against fire (Argentina and Chile, UNTS #9075)

\*Denotes the agreement is excluded in the “exclusive sample”