**The Impact of NGOs in International Environmental Negotiations:
Do NGOs Induce Stronger Environmental Commitments?**

June 2, 2010

Words: 8,911

TOBIAS BÖHMELT and CAROLA BETZOLD

Center for Comparative and International Studies, ETH Zurich, Switzerland

Abstract

Although previous work largely suggests that non-governmental organizations (NGOs) might have a positive impact on international environmental negotiations to the extent that states in turn are more likely to agree on stronger environmental commitments, the empirical evidence is unclear. In order to address this shortcoming, this article firstly employs a spatial bargaining model, which demonstrates that NGOs primarily help states facilitating information problems in negotiations. The authors then analyze quantitative data on international environmental regimes and find evidence that NGOs do indeed positively influence environmental treaty negotiations. More specifically, the stronger the engagement of those civil-society actors and the more NGOs are effectively involved during negotiations, the higher the degree of regime members' commitment, i.e., their depth of cooperation afterwards. Finally, the theory on those variables implies that the impact of NGO pressure on state commitment levels should vary conditional on the number of NGOs involved. The paper finds evidence for this interaction, although the results go against conventional wisdom.

Introduction

The last decades have seen a significant rise in the involvement of non-governmental organizations (NGOs)[1] in global environmental governance (Charnovitz 1997; see also Raustiala 1997; Arts 1998; Newell 2000). NGOs do not only increasingly participate as observers in negotiations over environmental treaties, but also actively intervene by directly exerting pressure during the bargaining of states. In the early 1990s, for example, the International Institute for Applied Systems Analysis (IIASA), an international non-governmental research institute, engaged during the negotiations of the long-range transboundary air pollution regime (LRTAP) by developing the so-called "Regional Air Pollution Information and Simulation" model, which helped the member states to be more aware of environmentally effective and cost-efficient emission reductions (Albin 1999: 378). However, countries fiercely opposed the value and desirability of NGOs in many other cases and – at best – only allowed NGOs to participate as observers. Ultimately, NGOs were then only marginally able to affect the outcome of states' negotiations (e.g., Rahman and Roncerel 1994).

The heterogeneity of NGO engagement and its impact in international environmental negotiations have become the focus of a growing body in the literature. Although these studies theoretically argue and generally find empirical evidence that NGOs affect governments' bargaining over environmental policies, it is not yet entirely clear whether this engagement has a positive impact toward stronger rules and regulations that help improving environmental quality or not. Similarly to the latter

---

[1] For this study, we define NGOs as non-profit making, non-violent organizations that do not represent governments or states and that aim to positively influence environmental issues (see Albin 1999: 373; Charnovitz 1997: 186). Note that this definition therefore only considers "pro-environment" organizations and excludes non-profit organizations that do not primarily pursue environmental goals, e.g., trade-lobbying organizations. Also, we only consider NGO activity during the negotiation process. Due to the limited availability of data, more direct ways of shaping international environmental governance are not taken into account, but see e.g., Wapner (1995; 1996).

point, some scholars even argue that NGOs are unlikely to play any significant role at all.

We take the ambiguity of empirical evidence on the impact of NGOs in environmental negotiations as a motivation for our research and contend that the heterogeneity of findings primarily stems from the rather qualitative nature of the literature. So far, scholars largely employed case-study designs using process tracing and/or counterfactual analysis for determining if NGOs matter for some specific treaty negotiation. Although we strongly believe that these studies provide us with crucial insights into the civil society-government nexus, their empirical findings are usually limited to those specific cases only, which in turn significantly constrains their generalizability.

In order to address this shortcoming, this article seeks to make two contributions. First and building upon the existing qualitative research on NGO activities in international environmental negotiations, we elaborate a spatial model of governmental-NGO interaction, which shows that NGOs and their engagement primarily help states facilitating information problems in negotiations. Second, by analyzing data on international environmental regimes in 1948-1998, we employ a large-N research design for empirically examining the impact of NGOs in international environmental negotiations. In light of this, we obtain strong support that NGOs do matter and are able to positively affect environmental negotiations. More specifically, the stronger the degree of engagement of those civil-society actors and the more NGOs are effectively involved in negotiations, the higher their degree of leverage over states, which is likely to increase the environmental awareness of the latter. Ultimately, regime members are then more likely to agree on higher levels of commitment, i.e., the depth of cooperation

(Downs et al. 1996). Finally, the complementary effects of these variables imply that the impact of NGO engagement on the prospects for strong environmental commitments should vary conditional on the number of intervening NGOs. The paper finds evidence for this interaction, although the results go against conventional wisdom.

In what follows, this paper proceeds in five steps. The next section reviews the existent literature on NGOs and their impact in environmental negotiations. We then develop a spatial model of governmental-NGO interaction in bargaining processes, which in turn enables us to derive a set of testable hypotheses. The following sections outline the data, the variables, as well as the methodology, and present the findings from the quantitative analysis. The final section summarizes our results and discusses the implications for decision makers and future research.

The Impact of NGOs in International Environmental Negotiations – An Overview

The significant growth in NGO activities has been paralleled by a surge in academic interest and non-state actors have become a "hot issue" in the literature (e.g., see Arts 2003: 3). However, much of the research comprises case studies that merely describe the role of environmental NGOs in one particular negotiation context (e.g., Weiss and Gordenker 1996; Gulbrandsen and Andresen 2004; Betsill and Correll 2008), and more generalizable or systematic work is still rare. Nevertheless, the previous research has produced an interesting body of insights.

The engagement of NGOs in environmental negotiations can take various forms. Most generally, NGO activities are classified as "insider" or "outsider" strategies (Gulbrandsen and Andresen 2004: 56). With regard to the former, NGOs cooperate closely with government representatives, by offering policy solutions and expert advice,

or provide knowledge through research. Alternatively, NGOs put pressure on negotiators by influencing public opinion "through campaigning, letters of protest, rallying, direct actions, boycotts, and even civil disobedience." Many NGOs typically combine the two and pursue a dual strategy.

In more detail, Gough and Shackley (2001) suggest three categories of NGO activities inside and outside of negotiations: the development of creative policy solutions, knowledge construction/coalition building, and lobbying or campaigning, which they interpret as shaping public opinion through the use of the media.[2] Yamin (2001) offers a similar list, arguing that different stages "in the life-cycle of international environmental law" require different strategies: NGOs act as agenda setters when they generate public pressure for action, provide legitimacy to such negotiations, offer scientific, technical, and policy advice, lobby delegates, or actually participate in official national delegations.

Against this background, existing studies largely suggest that NGO activities are positively related to higher environmental commitment levels of states. The underlying rationale for this positive relationship is that NGOs have specific resources and capabilities that governments cannot easily or efficiently provide themselves. In particular, this pertains to information provisions on policy options, political consequences, and electoral preferences. Even lobbying comprises nothing else than information provision since it is the "stimulation and transmission of communication, by someone other than a citizen acting on his own behalf, directed at a governmental decision maker with the hope of influencing his decision" (Berry 1977: 11). Ultimately, NGO engagement should decrease states' uncertainty about possible outcomes and raise

---

[2] See also Betsill and Corell (2001), Charnovitz (1997), and Gemmbill and Bamidele-Izu (2002) for similar descriptions.

their environmental awareness. "Information thus becomes the key currency for NGOs in exerting influence during an international treaty negotiation" (Betsill and Corell 2001: 74). Consistently, Paterson (1996: 10) examines NGO engagement during the UN Framework Convention on Climate Change (UNFCCC) negotiations and argues that "it is hard to conceive that their very high profile, their persistent lobbying, and their links to the media both internationally and in their own countries were without effect." In other words, NGOs were present and generally able to exert influence on the negotiating states. Paterson (1996), however, does not say much about how this actually changed states' behaviour.

Similarly, Raustiala (1997) studies the participation of NGOs in environmental institutions and claims that active, i.e., influential NGO participation is likely to enhance the ability of regime members to address environmental problems more effectively. Transboundary environmental problems became more complex and more severe over the past. In this regard, NGOs provide policy advice, help monitoring states' commitments, or facilitate signaling between governments and constituents (see also Raustiala 2001). This ultimately increases the environmental awareness of states, making them more likely to agree on stronger commitments.

However, although NGOs might generally be active and influential during a bargaining process, states as the crucial actors in environmental negotiations may in turn not necessarily alter their behavior in response to those activities, which ultimately induces that NGO engagement is without effect (see Skolnikoff 1990). For example, NGOs themselves – unlike Paterson (1996) – acknowledge that in the end they were unsuccessful in shaping the outcome of the UNFCCC negotiations (Rahman and Roncerel 1994). Björkbom (1999: 406) argues the same when pointing out that "NGO

pressure in the negotiating room has had but a marginal influence on the results of the negotiations" of the LRTAP framework (see also Albin 1999; Raustiala 1997). He contends that the main reason for this relatively poor evaluation is the fact that NGOs could only act as observers and were unable to exert crucial pressure via official delegation membership, for example.

Likewise, Albin (1999: 372) demonstrates that the "participation of NGOs in international fora remains largely unofficial, ad hoc, or subjected to the preferences of national governments." Although Albin (1999) does not make explicit statements about the actual impact of this, she implies that NGOs in international environmental negotiations are likely to have little effect. Nonetheless, the author recognizes the potential of those civil-society actors by pointing out that NGOs are in principle able to affect negotiations *inter alia* via the provision of information and expertise (Albin 1999: 378). This is in line with the other studies and Albin (1999: 373) further claims that the uncertainty about the actual impact of NGOs on international environmental negotiations might be caused by the lack of theoretical work.

In sum, this overview essentially means for our work not only that there is a lack of theoretical consensus on the impact of NGO engagement in international environmental negotiations, but also that empirical research that is able to make general statements on this issue does not yet exist. As Betsill and Corell (2001: 68) emphasize: "there is a great demand for general conclusions across cases." In the following, we seek to address these issues by, first, outlining a spatial bargaining model of governmental-NGO interaction and, second, empirically examining the impact of NGOs via a large-N multivariate analysis.

Theory: Do NGOs Induce Stronger Environmental Commitments?

General Intuition

As the previous section emphasizes, NGOs rely on various resources, activities, and access possibilities during negotiations (Betsill and Corell 2001: 71; see also Arts 1998; Newell 2000). However, regardless if these civil-society actors pursue the development of policy solutions, knowledge construction/coalition building, or lobbying and campaigning (Gough and Shackley 2001), NGO engagement usually translates into the provision of information, which in turn should decrease policy makers' uncertainty about the consequences of their actions.

In more detail, international environmental issues are highly complex, and decision makers often turn to NGOs for help in understanding the nature of a problem in question and the implications of various policy alternatives under consideration. NGOs' activities in international bargaining thus rely on their ability to offer information and expertise to the negotiating states (Choucri 1993; Gemmbill and Bamidele-Izu 2002: 13ff; Princen 1994: 34ff; Raustiala 1997: 726f). In turn, expertise and knowledge provide NGOs with legitimacy and leverage over the negotiations (Albin 1999: 377; Raustiala 1997: 727). Due to this specialized knowledge, NGOs seek to modify states' perceptions and interests. In particular, environmental groups highlight the negative consequences of faineance or insufficient action while stressing the positive implications if states pursue the right policies (Betsill and Corell 2001: 74). Changing perceptions with regard to costs and benefits should induce that states realize the potential gains from stronger environmental agreements. Ultimately, this raises the environmental awareness of countries as well as decreases the level of uncertainty about the consequences of their very own actions, and, hence, NGO engagement should make

stronger commitments more likely. During the negotiations on the "Ocean Dumping And Trade in Waste Regime," for example, Greenpeace convincingly demonstrated the governments that their terms meant to address the environmental problem were not far-reaching enough, but even unlikely to cause any substantial improvement. This significantly raised the awareness of states about the consequences of their actions and eventually made them to agree on stronger commitments.

Since NGOs can take different forms of action (Gough and Shackley 2001), note that the general intuition of our argument works in two directions. On one hand and directly addressing state actors, more information allows governments to calculate costs and benefits of any potential action more precisely. Uncertainty is thus reduced and stronger environmental commitments become more likely. On the other hand, NGOs also address the general public and seek to change public opinion in favor of strong agreements via lobbying or campaigning. Strong environmental agreements thus become desirable from a political perspective, since these mirror the electorate's preferences and thus increase the likelihood that governments stay in power (Downs 1957).

A Spatial Model of NGO Engagement

For illustrative purposes, we model these two processes in a spatial bargaining model (see Fearon 1998; Powell 1999; Beardsley 2008). Assume that there are two states, *A* and *B*, which negotiate over the distribution of commitment levels for addressing an environmental problem. Their preferred outcomes over this issue fall into the interval $X=[0;1]$. Let the states' utilities for a given outcome $x \in X$ be $u_A(x)$ and $u_B(1-x)$. Due to

simplicity, we assume that both states prefer agreement over non-agreement.[3] In the latter case, i.e., when negotiations fail, there is no higher commitment and states have to rely on unilateral measures to address the environmental issue in question by, for example, implementing unilateral fishing quotas.
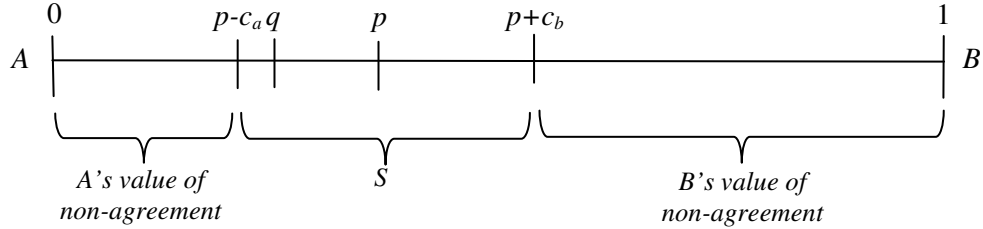

Against this background, p represents A's expected payoff in case the bargaining fails and no agreement is reached. Since this implies that A takes unilateral measures entailing costs, this payoff is effectively reduced to $p-c_a$. The same logic applies to B, whose net value for non-agreement is then $1-p+c_b$. Consequently, the bargaining space S is the set of mutually preferred outcomes, and is represented by the interval $[p-c_a; p+c_b]$. With regard to the status quo, A's value for this is q, while B's value has to be $1-q$. If q is outside the overlapping bargaining space, i.e., $q \notin [p-c_a; p+c_b]$, bargaining failure is more likely because one actor is truly dissatisfied as it values a non-agreement outcome higher than the status quo.

Note that the previous setup assumes complete information. Both A and B are fully aware of their counterpart's preferences or know the costs/benefits of possible outcomes. As argued above, however, this seems unreasonable. We therefore introduce uncertainty in the bargaining framework by "extending" the range of options that is indeed acceptable to both actors. More specifically, we model uncertainty with the

---

[3] This assumption seems plausible in our context since we focus on states' negotiations in which these actors already invested considerable resources. Note, however, that Saudi Arabia's actions during the climate change negotiations provide a counter example (see Depledge 2008).

interval $[c^{l,a} ; c^{u,a}]$, i.e., a uniform distribution of B's estimate of A's costs of non-agreement. If B overestimates A's cost in the sense of $c^{u,a}$, B falsely assumes that q lies within the bargaining space and, hence, does not perceive A's true dissatisfaction with the status quo. Higher commitment levels increasingly become less likely as a result.

maximum perceived bargaining space
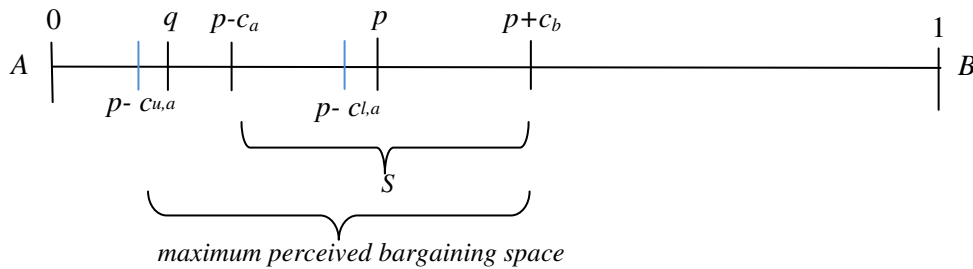
However and in consistence with our argumentation above, NGOs now come into play and provide both A and B with more information about the actual costs and benefits. NGOs may also seek to address the general public and try to shape public perceptions about environmental problems. Such mobilization campaigns are likely to affect the political costs of an agreement to the extent that a more environmentally-aware electorate prefers higher environmental commitments (see Albin 1999: 381). Consequently, A and B are more likely to correctly identify the true bargaining space as the new upper bound of B's estimation of A's cost, $d^{u,a}$, and the lower bound, $d^{l,a}$ are closer to the real cost c than the original estimated range: $[d^{l,a} ; d^{u,a}] < [c^{l,a} ; c^{u,a}]$. Put differently, NGOs help states facilitating information problems in negotiations by reducing the uncertainty about costs and benefits. This decreases the likelihood of non-agreement and simultaneously increases the chances that the parties agree on higher environmental commitment levels.

maximum perceived bargaining space with NGO information
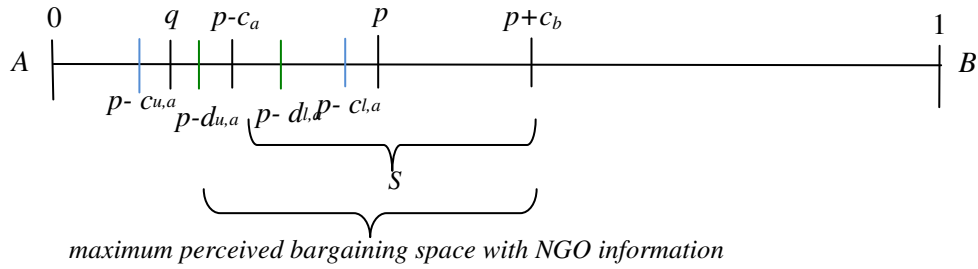
Hypotheses

Due to our previous argumentation about NGO engagement, information provision, and the impact on states' environmental commitment levels, we are now able to derive a set of testable hypotheses. First, NGOs are likely to effectively decrease uncertainty and affect governmental policies only if they play a substantial role during states' negotiations and/or put significant pressure on those states. As indicated above, however, NGOs may act as observers only without any formal voting authority or influence in the majority of cases (Betsill and Corell 2001: 68). This constrains the impact possibilities of these civil-society actors. On the other hand, NGOs increasingly gained participation rights in the past for some negotiations and organized influential campaigns as well as demonstrations. We also saw environmental negotiations where NGOs acted as official members in state delegations, allowing them to directly influence decision-makers, to receive documents, and to present proposals (see Raustiala 1997: 722f). Similarly, Albin (1999: 383) emphasizes in her case study that NGOs have to be selected as members to national delegations for effectively being able to affect governmental policies and to push for higher environmental commitments (see also Gemmil and Bamidele-Izu 2002: 6). Accordingly, we argue in our first hypothesis.

H1: The higher the level of NGO activity during international environmental negotiations, the higher the commitment level of states afterwards.

Second, NGO influence *per se* is unlikely to be the only determinant we have to consider here. For instance, there might be only a few NGOs that engage during an environmental negotiation or exert pressure. Although this still should positively influence states' commitment levels according to our rationale, a different setup might see a larger number of NGOs engaging or there might be negotiations without any NGO activity at all. Put differently, we observe variance in the number of NGOs actively engaged. In light of this, a structural theoretical argument suggests that a larger number of NGOs has in principle more leverage than a single or few NGO(s) and should thereby be also more effective in positively affecting states' commitment levels. NGOs can only be effective if they help the bargaining parties out of a predicament, and for this they usually need leverage. Due the combined leverage of a larger number of NGOs, more NGOs can then generally create obligations and expectations that help establish stronger commitments. A single NGO does often not have such an amount of leverage that may be necessary for having an impact on nation states during environmental negotiations. We therefore claim:

H2: The more NGOs exert influence during international environmental negotiations, the higher the commitment level of states afterwards.

Finally, while the first hypothesis only examines the actual level of NGO activity or pressure exerted, our second hypothesis looks at the size of an NGO group and assumes that more NGOs are generally better able to exert leverage over the negotiating parties.

It may well be the case, however, that there is a large number of NGOs trying to exert pressure in environmental negotiations, but ultimately fails in doing so. In other words, although there is a large group of NGOs present during the negotiations, all of them, for example, are only allowed to participate as observers, which decreases the possibilities for engaging significantly. Hence, the complementary effects of the NGO activity level and the actual number of civil-society actors involved imply that the impact of NGO engagement on the prospects for higher environmental commitments of states should vary conditional on the number of intervening NGOs. This rationale leads to our last hypothesis, which essentially models an interaction effect between the two factors from our previous hypotheses:

H3: The impact of the level of NGO activity on states' environmental commitments is conditional on its interaction with the number of NGOs involved: the more NGOs involved are more strongly engaged in international environmental negotiations, the higher the commitment level of states afterwards.

Research Design

Data

For empirically testing our hypotheses, we use the International Regimes Database (IRD) since these data comprise all variables necessary for our claims – despite the IRD's focus on international regimes. The IRD is structured along regimes, components within regimes, and particular problems nested within these components (Breitmeier et al. 1996; Breitmeier, Young, and Zürn 2006; Young and Zürn 2006). For example, the International Whaling Regime is divided into components according to two different

time periods: from 1946-1982 and then from 1982-1998. Two problems are coded for each of these two components: the conservation of whale stocks and the development of the whaling industry. In sum, we obtain a total of 23 regimes, which in turn have 88 regime components and 124 collective action problems.

Due to three reasons, we use a specific collective action problem of a regime as the unit of analysis. First, we avoid aggregating different and sometimes contradictory regime goals into one observation. The Whaling Regime is an obvious case for this problem. Second, this approach is the most accurate approximation to the consensus definition of regimes, i.e., agreeing on and implementing explicit principles, norms, rules, and decision-making procedures that define expected behavior in a specific problem field (Krasner 1983). We therefore avoid any theoretical confusion with the existent regime literature. Finally, choosing collective action problems instead of components or aggregated institutions increases the number of observable implications for our theoretical claims, thereby enhancing the generalizability of our findings (King, Keohane, and Verba 1994).

The IRD's information was collected by 48 independent scholars in the field of environmental politics, varying from one to four coders for any particular variable.[4] Although this approach has many advantages, there might be problems with the reliability of the information due to the possibility of coders' cognitive bias. The IRD's data team addressed this problem, though, by relying on scholars who are recognized for their expertise and by engaging in discussions with these coders (Breitmeier, Young, and Zürn 2006: 59). Breitmeier, Young, and Zürn (2006: 60) also emphasize that coders were supposed to answer only when they could respond with confidence. To control for

---

[4] For a comprehensive description on how the experts obtained the data, see Breitmeier et al. (1996).

any other remaining bias, we use the answers of all experts and then calculate the mean value for a single variable. If we had the information from one coder only, we used this information without any further adjustments. Finally, we calculated Cohen's κ scores in order to obtain an assessment of the inter-coder reliability (Cohen 1960; Dorussen, Lenz, and Blavoukos 2005).[5]

Dependent Variable and Methodology

According to our theoretical argumentation, the dependent variable has to capture the degree of states' commitment to solve an environmental problem.[6] In this context, Downs et al. (1996) developed the concept of "depth of cooperation." This is the extent to which an environmental treaty demands actual behavioral changes from its members, being measured by the density and specificity of a regime's primary rule system (Downs et al. 1996: 383). The depth of cooperation therefore offers an objective measure for the actual level of states' environmental commitment. We use the IRD's REGIME_SHALLOW variable that ranges from 1 (very shallow level of cooperation) to 5 (very deep level of cooperation). Table 1 shows the variation in *Depth of Cooperation*. Very shallow levels of cooperation are characterized by only a very limited number of rules, and/or established procedures are rather weak compared to the specificity of the rules considered necessary for managing the environmental issue in question. The Vienna Convention or the UNFCCC are regimes of such a kind. 17.74%

---

[5] Please see the appendix for the discussion on the κ scores.

[6] Also note that these commitment levels should reflect the policy positions of NGOs, since otherwise we would not be able to claim a causal relationship between NGO engagement and stronger environmental commitments. An objective measurement may appear rather difficult in this context as oftentimes there are numerous NGOs involved in international environmental negotiations, with individual, sometimes not necessarily overlapping goals. However, since our analysis only examines the engagement of pro-environmental NGOs, it is plausible to assume that higher environmental commitments of states also mirror the interests of these NGOs (Betsill and Corell 2001: 75).

of our observations have a rather shallow level of cooperation. For example, although the original framework of the LRTAP convention is characterized by a very shallow level of cooperation, states decided to adopt their behavior according to the environmental changes and established a somewhat higher, shallow level for the succeeding first sulfur protocol. The largest category of observations, i.e., about 41% has a medium depth of cooperation. The treaty for the conservation of flora and fauna, seals, etc. in the Antarctic region is one regime belonging to this class of *Depth of Cooperation*. 25.81%, such as the Whaling Regime after 1982, of our observations demonstrate a rather deep level of cooperation. Finally, very deep levels of cooperation are regimes comprising a very comprehensive set of rules and/or established procedures, which are relatively strong compared to the specificity of the rules necessary for addressing an environmental problem effectively (Breitmeier et al. 1996: 85). As the most prominent example, the CITES convention after 1989 belongs to this cluster of about 3.23%. In sum, Table 1 shows that we have a sufficient amount of variance for the *Depth of Cooperation*, but less than 30% of the cases actually have a depth of cooperation that goes beyond medium levels.

_____

Table 1 in here

_____

Due to the ordinal scale of our dependent variable, an ordered-probit setup seems appropriate. Note, however, that a shortcoming of using sub cases of regimes as the unit of analysis is that collective action problems are likely to have significant elements in common with each other. For example, it is unlikely that the two collective action problems from the Whaling Regime are independent from each other due to common

factors not explicitly controlled for. The most accurate solution for addressing this problem would be a fixed-effects approach. This possibility is excluded in our case since fixed-effects parameters generally lead to biased coefficient estimates when using a maximum-likelihood estimator. Instead, we use a random-effects ordered probit model (Crouchley 1995).[7]

Independent Variables

In order to operationalize NGO activity and the number of those civil-society actors being involved in international environmental negotiations, we employ two variables from the IRD. First, we take the IRD's NEGOTIATE_NON_STATE_ROLE (Breitmeier et al. 1996: 57), which describes what kind of roles NGOs played during the negotiations of an environmental regime. We recoded the variable for obtaining an ordinal scale, where higher values represent stronger NGO engagement or exerted pressure. More specifically, a value of 0 stands for no NGO activity or observer roles; .5 signifies that NGOs exerted pressure either inside or outside the negotiations in some way; 1 pertains to NGOs that were a member of a national delegation or a negotiation body; and 1.5 stands for cases where NGOs pursued a dual strategy combining values 1 and .5. Due to a regime's collective action problem as our unit of analysis and since there may be multiple NGOs during the negotiations on these, we use a strongest-link specification of our recoded variable (see Dixon 1993), i.e., this *NGO Activity* item takes the value of the strongest activity of any NGO involved during an environmental negotiation.

---

[7] Hausman tests demonstrate that the regular ordered probit estimator is less efficient. Also note that an alternative may be a multilevel-model estimator. However, this is precluded by the lack of coding of regimes as distinct from components.

Second, using the IRD's NONSTATE variable (Breitmeier et al. 1996: 57), we then counted the number of NGOs that were present during the negotiations of a regime treaty. Note, however, that counting and considering all NGOs that are present during an international environmental negotiation would overestimate the impact of this variable since we would also incorporate those NGOs that only acted as observers and, hence, were unlikely to exert any pressure at all. In other words, we have to consider only those NGOs that exerted at least some engagement or pressure, i.e., that obtained at least a value of .5 on the *NGO Activity* variable. In addition, it also seems plausible to weigh NGOs according to their actual level of engagement (see Lijphaart 1999: 65ff). We therefore calculated the "effective" or "decisive" number of NGOs (see Laakso and Taagepera 1979):

$$\textit{Effective Number of NGOs} \ = \frac{1}{\sum s_j^2}$$

where s_j is the share of the summed level of activity for each NGO j in a given environmental negotiation. A value of 1 consequently stands for only one effective NGO, while higher values signify that other effective NGOs do exist. In order to illustrate this crucial point and to make our calculations transparent, consider the following example: the IRD lists four NGOs for the negotiations of the Antarctic Treaty between 1989 and 1998: the Antarctic and Southern Ocean Coalition (ASOC), Greenpeace, the International Association of Antarctica Tour Operators (IAATO), and the Scientific Committee on Antarctic Research (SCAR). While ASOC and Greenpeace both exerted pressure inside and/or outside the negotiations as well as had members in states' official delegations, IAATO only exerted some pressure inside and/or outside the negotiations. The SCAR was only granted access as an observer, though. According to

this, we assigned values of 1.5 to ASOC and Greenpeace, a value of .5 to IAATO, and a value of 0 to SCAR. Against this background, the summed influence would be 3.5 here and the value of *Effective Number of NGOs* is 2.58.[8] We expect this item to be positively related to the depth of cooperation.

Finally, for testing our third hypothesis on the interaction between *NGO Activity* and *Effective Number of NGOs*, we multiply both items and include the new variable simultaneously in the models.[9]

Control Variables

Neglecting to control for other determinants of states' level of environmental commitment that are not specifically addressed in our theoretical discussion could induce biased results. Therefore, we consider four additional covariates. First, Mitchell (2006: 81) stresses the importance of uncertainty on an environmental problem in question. On one hand, uncertainty increases the reluctance to adapt strong environmental commitments. In turn, higher levels of transparency make states more likely to rely on other actors' compliance, which should increase the likelihood of stronger commitments (see Keohane 1984; Hawkins, Lake, Nielson, and Tierney 2006). Finally, due to our theoretical emphasis on NGO's information provision in order to reduce the level of incomplete information, including a variable on uncertainty also

---

[8] More precisely, $2.58 = \dfrac{1}{\left(\dfrac{1.5}{3.5}\right)^2 + \left(\dfrac{1.5}{3.5}\right)^2 + \left(\dfrac{0.5}{3.5}\right)^2}$.

[9] Note that although we basically use the level of NGO activity as a weight to obtain an estimate of the "decisive" number of NGOs involved, the *Effective Number of NGOs* as such is a poor proxy for testing our third hypothesis. Due to the calculation of *Effective Number of NGOs,* we would obtain the exact same value for a case where we have three NGOs with an influence of .5 each and a case with three NGOs as well but all received a value of 1.5 on the activity scale. Hence, we need the multiplicative term for testing the third hypothesis.

decreases the likelihood of finding spurious relations between our core variables of interest and *Depth of Cooperation*. We use the IRD's PROBLEM_UNDERSTAND item (Breitmeier et al. 1996: 32).

Second, Barry (1978) emphasizes the influence of hegemons for international regimes and environmental commitments. These actors organize an institution, they ensure that other members pursue a common interest, and they allow states not favoring the hegemon's interest to agree on a policy through the provision of side-payments (Frohlich and Oppenheimer 1970; Grundig and Ward 2008). We include POWER_SETTING_SYMMETRY, with the highest value standing for an issue specific hegemon (see Russett and Sullivan 1971; Gilpin 2001).

Finally, the larger the number of states in an environmental negotiation, the higher the costs of organizing them, and the less likely that they are able to provide an environmental good optimally (Olson 1965; Chamberlain 1974). Thus, by using the IRD's NUMBER_CAUSERS variable (Breitmeier et al. 1996: 14), we consider the number of actors that are potentially relevant for an environmental problem. Further, relying on GOOD_TYPE (Breitmeier et al. 1996: 24), we generate a dummy variable for environmental public goods. We refer to environmental public goods when individual states within a given group cannot be excluded from good consumption and the amount consumed by one country does not decrease the available amount for others. We also multiply the *Size* item with the latter variable in order to capture existent interaction effects.

Table 2 provides an overview of the variables.

_____

Table 2 in here

_____

Empirical Findings

Table 3 reports our findings from the random-effects ordered probit regression analyses. We run four models. Model 1 includes the two core variables only. Model 2 then introduces the interaction effect, while Model 3 exclusively focuses on the control covariates. Finally, Model 4 incorporates all explanatory variables simultaneously.

_____

Table 3 in here

_____

As Table 3 demonstrates, we obtain a rather good model fit. McFadden's R^2 ranges in the interval [.04; .19] when considering all models, but in the interval [.11; .19] when we exclude Model 3, i.e., the model without the core explanatory items. This demonstrates that the control covariates as suggested by the literature do not contribute much toward explaining variance in the regime members' commitment levels. This finding is also mirrored by the likelihood ratio test for Model 3: it is only marginally significant and, hence, does not convincingly reject the hypothesis that all coefficients might be indistinguishable from zero here. Note that the marginal significance of the likelihood ratio test in the third model is essentially driven by *Uncertainty*. As expected, the impact of this variable is negative and highly significant. Adding or dropping variables from the model does not alter this finding. Hence, the higher the uncertainty of actors about the environmental problem in question and the consequences of their

actions, the more reluctant are these actors, which in turn translates into lower environmental commitments afterwards. Apart from *Uncertainty*, however, only *Size*, the variable on public goods, and the interaction term perform as expected in Model 4. Here, the interaction term is statistically significant at the 10% level and shows that the larger the group of relevant actors for an environmental problem, the more detrimental is the marginal impact of the public goods item. In other words, the larger the size of a group bargaining about the distribution of an environmental public good, the higher the likelihood that this group ultimately fails and there is no effective collective action at all. Note, though, that the overall effect of these variables is not significant in Model 3 and, hence, the impact of *Size* and *Environmental Public Good* depends on model specifications. The final control variable, *Hegemon*, has the predicted sign, but is far from reaching conventional levels of significance. This finding may be caused due to the lack of variance of this item and our rather small sample size, however.

Coming then to our core variables of interest, we first start discussing the model without the interaction effect. Both items, *NGO Activity* and *Effective Number of NGOs*, have the expected positive sign and are highly significant. In more detail, the higher the maximum level of engagement of any NGO during the negotiations of an environmental regime, the higher the commitment level of states afterwards. If at least one NGO was able to affect negotiations via its official membership in a delegation or exerted significant pressure otherwise, it seems that states adopted the pro-environmental policies of NGOs at least to some extent and were generally more willing to agree on stronger levels of environmental commitment. Second, it also seems that the more NGOs were effectively present during negotiations, the higher the depth of cooperation. Recall that *Effective Number of NGOs* weighs the present number of NGOs by their

engagement during negotiations. If more NGOs were actively engaged during negotiations, e.g., through delegation membership or other pressure and influence possibilities, then these civil-society actors were more likely to push governments towards higher environmental commitments, i.e., a higher level of depth of cooperation. In other words, a larger number of NGOs with significant activities is more likely to create leverage over the states in bargaining processes, which in turn makes the latter more aware of the environmental problem and the consequences of their possible actions. Ultimately, states are significantly more likely to agree on higher commitment levels.

Models 2 and 4 then incorporate the interaction term between *NGO Activity* and *Effective Number of NGOs.* In trying to understand the interaction effect, note that it cannot be interpreted directly (Braumoeller 2004; Brambor, Clark, and Golder 2006). Instead, we recoded *Effective Number of NGOs* in Model 4 into ten categories and calculated the marginal effects as well as the confidence intervals for the NGO activity item conditional on *Effective Number of NGOs* (Braumoeller 2004: 815ff). Figure 1 depicts our findings.

_____

Figure 1 in here

_____

Until three "effective" NGOs in environmental negotiations, we obtain a positive and significant marginal effect of *NGO Activity.* This basically mirrors our findings from the model without the interaction term. Figure 1, however, reveals two interesting differences. First, the marginal effects decrease with more effective NGOs involved. In other words, although the general impact on the depth of cooperation is still positive,

the size of this effect decreases with more NGOs. Second, if more than three NGOs were effectively engaged, the impact of *NGO Activity* becomes even negative although it is statistically insignificant. This implies that the level of NGO activity in international environmental negotiations does matter – but it largely depends on how many NGOs are actually involved. Although we lack a coherent explanation for this finding at this stage and seek to address it in future research, we believe that one explanation might seem plausible. Pro-environment NGOs in environmental negotiations essentially seek to pursue a common interest, which reflects a collective action problem in the sense that some NGOs might have incentives to free-ride on the efforts of others. In the words of one NGO member, for example, "when so many different [NGO] actors are drawn into the process, there is a danger that our demands may be blunted […]. Consequently, we may end up with a 'lowest common denominator' which is no better than the kind of compromises diplomats engage in" (see Bernstein et al. 1992). Hence, if many NGOs are effectively involved in bargaining processes, then this increases the likelihood that they actually face a collective action problem of participation and exerting pressure. The actual level of NGO activity does no longer play a crucial role then, but instead NGOs constrain or block themselves in their efforts, leading to the overall unimportance as shown by the insignificant marginal effect of *NGO Activity* for more than three "effective" NGOs.

Conclusion

This article has sought to increase our understanding of the impact of NGOs in international environmental negotiations. So far, very few attempts have been made to theoretically and empirically analyze the relationship between governments and civil

society groups. Whereas some scholars argue here that NGO activity might influence bargaining outcomes negatively, others emphasize that NGOs in principle are able to positively contribute to negotiation outcomes and stronger environmental commitments. For our research, we elaborated this idea in more detail via a spatial bargaining model, highlighting that NGOs primarily help states facilitating information problems in negotiations. We then went further by analyzing data on international environmental regimes and examined the impact of NGOs empirically.

To recap, we found strong support for each hypothesis. First, the higher the level of NGO activity exerted during international environmental negotiations, the higher the commitment level of states, i.e., their depth of cooperation afterwards. NGOs seem indeed to be able to provide states with valuable information, thus increasing their environmental awareness, and decreasing their uncertainty about consequences of future actions. This then raises the likelihood that states are better aware of their long-term incentives and they are more likely to agree on higher commitment levels. Second, the more NGOs are effectively engaged in state negotiators, the higher the environmental commitment level of states. More civil-society actors are generally better able to create leverage over the official state negotiators, which in turn is translated into higher commitment outcomes. Finally, we found some evidence for an interaction effect between NGO engagement and the size of an NGO group. As it seems, the impact of NGO activity on states' commitment levels does stay positive for small groups of non-governmental actors, but decreases and becomes insignificant with larger groups. This largely goes against our theoretical expectations and the conventional wisdom on this issue.

The contribution of our work is primarily at an empirical level since we offer one of the first large-N research designs in this field. Unlike the existing studies on NGOs in environmental negotiations, we are able to generalize our findings and state that NGOs do not only matter but also have a significantly positive impact on bargaining outcomes. The implication that follows from a policy-advice perspective is straightforward. States face uncertainty about the consequences of their actions. This holds in particular true for environmental problems, which became more complex and more severe over the past. In this context, NGOs can provide valuable information as well as expertise that are essential for the outcome afterwards as they ensure that states indeed pursue their long-term interests.

Although our research was able to provide some answers on important questions in the context of the governmental-civil society nexus, other important issues remain understudied and many avenues for further research do exist. We outline two of them. First, we treated NGOs largely as a "black box", not addressing specific characteristics of these actors and only examined their level of activity. However, NGOs are highly diverse, they might comprise local, national, regional, or international organizations, having various missions (Gemmill and Bamidele-Izu 2002; Raustiala 1997: 721). Further, the effectiveness of NGOs is essentially driven by factors such as funding, the overlap with the interests of participating governments, the level of expertise, persistent lobbying, issue framing, or the successful advocacy and mobilization of environmental issues at both the national and the international level (see Albin 1999: 382). Hence, it seems an effort worth making to disaggregate NGO characteristics and in turn examine their impact on various factors more thoroughly.

Second and related to the previous point, although we answered the question if NGOs positively affect environmental negotiation outcomes, we did not address the question on why NGOs might become delegation members in the first place. NGOs are not randomly selected or chosen into state delegations. States decide and have to agree on this. But what are the incentives for states in the first place if it is frequently argued that NGOs undermine states' legitimacy, sovereignty, and decision-making power? Future research along those issues might be fruitful for further promoting our understanding of civil-society actors and their interaction with governments.

Appendix

With regard to a possible violation of inter-coder reliability, Table 4 shows Cohen's κ scores. All variables have inter-coder reliability scores significantly above the expected values. In terms of *Size* and *Public Goods,* we even have full agreement among the experts. The κ values of most variables are at least at .2. These scores can be considered as fair agreements (Landis and Koch 1977).

———————

Table 4 in here

———————

Table 1. The Depth of Cooperation.

	Frequency	Percent
Very Shallow	15	12.10
Shallow	22	17.74
Medium	51	41.13
Deep	32	25.81
Very Deep	4	3.23
Total	124	100.00

Table 2. Descriptive Statistics of Variables.

	N	Mean	Std. Dev.	Min	Max
Depth of Cooperation	124	2.903	1.023	1	5
NGO Activity	116	0.884	0.508	0	1.5
Effective Number of NGOs	105	2.049	1.257	0	5
NGO Activity * NGO Effective Number	105	1.796	1.375	0	6.878
Size	119	2.454	1.247	1	6
Environmental Public Good	124	0.427	0.497	0	1
Size * Public Good	119	0.941	1.199	0	6
Uncertainty	124	2.185	0.842	1	4
Hegemon	120	2.958	0.749	1	5

**Table 3. The Impact of NGOs on Environmental Commitment Levels (Random-Effects Ordered Probit Regression).**

	Model 1 (Base)	Model 2 (Interaction)	Model 3 (Controls)	Model 4 (Full)
NGO Activity	1.362	2.099		2.057
	(0.314)***	(0.533)***		(0.552)***
Effective Number of NGOs	0.544	0.818		0.944
	(0.112)***	(0.203)***		(0.207)***
NGO Activity * NGO Effective Number		-0.399		-0.465
		(0.237)*		(0.249)*
Size			-0.061	0.103
			(0.172)	(0.170)
Environmental Public Good			0.674	1.537
			(0.782)	(0.876)*
Size * Public Good			-0.101	-0.269
			(0.314)	(0.334)
Uncertainty			-0.500	-0.703
			(0.189)***	(0.184)***
Hegemon			0.105	0.062
			(0.221)	(0.237)
N	105	105	96	96
Log Likelihood	-124.615	-123.118	-125.683	-105.895
LR χ^2	30.89***	33.88***	10.34*	49.91***
ρ	0.770***	0.773***	0.539***	0.844***
Pseudo-R^2	0.11	0.12	0.04	0.19

Note: cut-points not reported; standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1% (two-tailed).

Table 4. Cohen's κ Statistics of Inter-coder Reliability.

	κ	Agreement	Exp. Agreement
Depth of Cooperation	0.37	0.54	0.27
NGO Activity	0.23	0.55	0.41
Effective Number of NGOs	0.33	0.42	0.13
Size	1.00	1.00	0.20
Environmental Public Good	1.00	1.00	0.51
Uncertainty	0.20	0.45	0.31
Hegemon	0.22	0.41	0.24

Note: interaction terms not reported; all table entries significant below 1%.
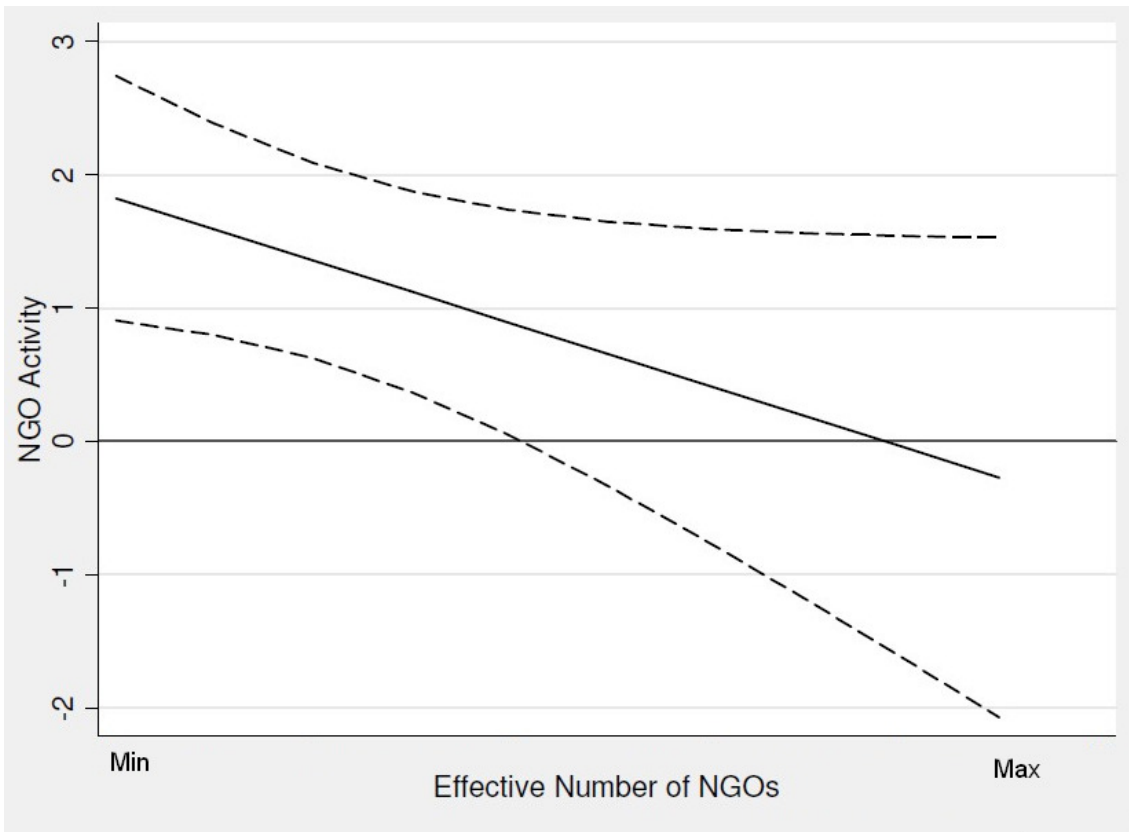
Note: Zero marked with line; dashed lines show 95% confidence interval.

Figure 1. The Conditional Impact of NGO Activity on Depth of Cooperation.

References

Albin, Cecilia. 1999. 'Can NGOs Enhance the Effectiveness of International Negotiation?.' *International Negotiation* 4: 371-387.

Arts, Bas. 1998. *The Political Influence of Global NGOs: Case Studies on the Climate and Biodiversity Conventions*. Utrecht: International Books.

Barry, Brian. 1978. *Sociologists, Economists, and Democracy*. Chicago, IL: University of Chicago Press.

Beardsley, Kyle. 2008. 'Agreement without Peace? International Mediation and Time Inconsistency Problems.' *American Journal of Political Science* 52(4): 723-740.

Berry, Jeffrey M. 1977. *Lobbying for the People: The Political Behavior of Public Interest Groups*. Princeton, NJ: Princeton University Press.

Bernstein, Johannah, Pamela Chasek, and Langston James Goree. 1992. 'Prepcom IV: The Final Stop on the Road to Rio'. *Network* 92(16).

Betsill, Michelle M. and Elisabeth Corell. 2001. 'NGO Influence in International Environmental Negotiations: A Framework for Analysis.' *Global Environmental Politics* 1(4): 65-85.

_____ (eds.). 2008. *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Negotiations*. Cambridge, MA: The MIT Press.

Björbom, Lars. 1999. 'Negotiations over Transboundary Air Pollution: The Case of Europe.' *International Negotiation* 4(3): 389-410.

Brambor, Thomas, William R. Clark, and Matt Golder. 2006. 'Understanding Interaction Models: Improving Empirical Analysis.' *Political Analysis* 14(1): 63-82.

Braumoeller, Bear F. 2004. 'Hypothesis Testing and Multiplicative Interaction Terms.' *International Organization* 58(4): 807-820.

Breitmeier, Helmut, Oran R. Young, and Michael Zürn. 2006. *Analyzing International Environmental Regimes: From Case Study to Database*. Cambridge, MA: The MIT Press.

Breitmeier, Helmut, Marc A. Levy, Oran R. Young, and Michael Zürn. 1996. *IIASA International Regimes Database - Data Protocol*. Laxenburg: IIASA Working Paper W-96-159.

Chamberlain, John. 1974. 'Provision of Collective Goods as a Function of Group Size.' *American Political Science Review* 68(2): 707-716.

Charnowitz, Steve. 1997. 'Two Centuries of Particiaption: NGOs and International Governance.' *Michigan Journal of International Law* 18(2): 183-286.

Choucri, Nazli (ed). 1993. *Global Accord. Cambridge*, MA: The MIT Press.

Cohen, Jacob. 1960. 'A Coefficient of Agreement for Nominal Scales.' *Educational and Psychological Measurement* 20: 37-46.

Crouchley, Robert. 1995. A Random-Effects Model for Ordered Categorial Data. *Journal of the American Statistical Association* 90: 489-498.

Depledge, Joanna. 2008. 'Crafting the Copenhagen Consensus: Some Reflections.' *Review of European Community & International Environmental Law* 17(2): 154-165.

Dixon, William J. 1993. 'Democracy and the Management of International Conflict.' *Journal of Conflict Resolution* 37(1): 42-68

Doherty, A. 1994. 'The Role of Nongovernmental Organizations in UNCED,' in: Bertram I. Spector, Gunnar Sjöstedt, and I. William Zartman (eds). *Negotiating*

International Regimes: Lessons Learnt from UNCED. London: Graham and Trotman.

Dorussen, Han, Hartmut Lenz, and Spyros Blavoukos. 2005. 'Assessing the Reliability and Validity of Expert Interviews.' *European Union Politics* 6(3): 315-337.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.

Downs, George W., David M. Rocke, and Peter N. Barsoom. 1996. 'Is the Good News about Compliance Good News about Cooperation?' *International Organization* 50(3): 379-406.

Finger, Matthias. 1994. 'NGOs and Transformation: Beyond Social Movement Theory' in: Thomas Princen and Matthias Finger (eds) *Environmental NGOs in World Politics: Linking the Local and the Global*. London: Routledge (48-68).

Fearon, James D. 1998. 'Bargaining, Enforcement and International Cooperation.' *International Organization* 50: 379- 406.

Frohlich, Norman and Joe A. Oppenheimer. 1970. 'I get by with a Little Help from my Friends.' *World Politics* 23(1): 104-120.

Gemmill, Barbara and Abimbola Bamidele-Izu. 2002. 'The Role of NGOs and Civil Society in Global Environmental Governance' in Daniel C. Esty and Maria H. Ivanova (eds) *Global Environmental Governance: Options and Opportunities*. New Haven: Yale School of Forestry and Environmental Studies

Gilpin, Robert. 2001. *Global Political Economy: Understanding the International Economic Order*. Princeton, NJ: Princeton University Press.

Gough, Clair and Simon Shackley. 2001. 'The Respectable Politics of Climate Change: The Epistemic Communities and NGOs.' *International Affairs* 77(2): 329-345.

Grundig, Frank and Hugh Ward. 2008. *Why Hegemons Do Not Always Get Their Way: The Supply of Public Goods And Leadership Competition.* Paper prepared for the 104th Annual Meeting of the American Political Science Association, Boston MA, August 28-31.

Gulbrandsen, Lars H. and Steinar Andresen. 2004. 'NGO Influence in the Implementation of the Kyoto Protocol: Compliance, Flexibility Mechanisms, and Sinks.' *Global Environmental Politics* 4(4): 54-75.

Hawkins, Darren. G., David A. Lake, Daniel L. Nielson, and Michael J. Tierney. 2006. 'Delegation under Anarchy: States, International Organizations, and Principal-Agent Theory.' In *Delegation and Agency in International Organizations* , eds Hawkins, Darren. G., David A. Lake, Daniel L. Nielson, and Michael J. Tierney. Cambridge, MA: Cambridge University Press.

Keohane, Robert. 1984. *After Hegemony - Cooperation and Discord in the World Political Economy.* Princeton, NJ: Princeton University Press.

King, Gary, Robert O. Keohane, and Sydney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research.* Princeton, NJ: Princeton University Press.

Krasner, Stephen D. 1983. 'Structural Causes and Regime Consequences: Regimes as Intervening Variables.' In *International Regimes,* ed Stephen D. Krasner. Cornell, NY: Cornell University Press.

Laakso, Markku and Rein Taagepera. 1979. 'Effective Number of Parties: A Measure with Application to West Europe.' *Comparative Political Studies* 12(1): 3-27.

Landis, Richard J. and Gary G. Koch. 1997. 'The Measurement of Observer Agreement for Categorical Data.' *Biometrics* 33: 159–174.

Ljiphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*. New Haven: Yale University Press.

Mitchell, Ronald, B. 2006. 'Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements.' *Global Environmental Politics* 6(3): 72-89.

Newell, Peter. 2000. *Climate for Change: Non-State Actors and the Global Politics of the Greenhouse*. Cambridge: Cambridge University Press.

Olson, Mancur. 1965. *The Logic of Collective Action – Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.

Paterson, Matthew. 1996. *Global Warming and Global Politics*. London: Routledge.

Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics*. Princeton, NJ: Princeton University Press.

Princen, Thomas. 1994. 'NGOs: Creating a Niche in Environmental Diplomacy,' in: Thomas Princen and Matthias Finger (eds) *Environmental NGOs in World Politics: Linking the Local and the Global*. London: Routledge (29-47).

Rahman, Atiq and Annie Roncerel. 1994. 'A View from the Ground Up,' in: I. M. Mintzer and J. A. Leonard (eds) *Negotiating Climate Change: The Inside Story of the Rio Convention*. Cambridge: Cambridge University Press (239-273):

Raustiala, Kal. 1997. 'States, NGOs, and Environmental Institutions.' *International Studies Quarterly* 41: 719-740.

Raustiala, Kal. 2001. Nonstate Actors in the Global Climate Regime. In Urs Luterbacher and Detlef F. Sprinz (eds): *International Relations and Global Climate Change*. Cambridge, MA: The MIT Press (95-117).

Russett, Bruce M. and John D. Sullivan. 1971. 'Collective Goods and International Organizations.' *International Organization* 25(4): 845-865.

Skolnikoff, Eugene B. 1990. 'The Policy Gridlock on Global Warming.' *Foreign Policy* 79(3): 77-93.

Susskind, Lawrence E. 1994a. *Environmental Diplomacy. Negotiating More Effective Global Agreements*. Oxford and New York: Oxford University Press.

_____. 1994b. 'What Will It Take to Ensure Effective Global Environmental Management? A Reassessment of Regime-building Accomplishments,' in: Bertram I. Spector, Gunnar Sjöstedt, and I. William Zartman (eds). *Negotiating International Regimes: Lessons Learnt from UNCED*. London: Graham and Trotman.

Temple Lang, J. 1993. 'Biological Conservation and Biological Diversity,' in: Gunnar Sjöstedt (ed) *International Environmental Negotiation*. Newbury Park and London: Sage Publications.

Thacher, P. 1993. 'The Mediterranean: A New Approach to Marine Pollution,' in: Gunnar Sjöstedt (ed) *International Environmental Negotiation*. Newbury Park and London: Sage Publications.

Wapner, Paul K. 1995. 'Politics beyond the State: Environmental Activism and World Civic Politics.' *World Politics* 47(3): 311-340.

_____. 1996. *Environmental Activism and World Civic Politics*. Albany: State University of New York Press.

Ward, Hugh. 2006. 'International Linkages and Environmental Sustainability: The Effectiveness of the Regime Network.' *Journal of Peace Research* 43(2): 149-166.

Weiss, Thomas G. and Leon Gordenker (eds). 1996. NGOs, the UN, and Global Governance. Boulder, CO: Lynne Rienner.

Yamin, Farhana. 2001. 'NGOs and International Environmental Law: A Critical Evaluation of their Roles and Responsibilities.' *Review of European Community and International Environmental Law* 10(2): 149-162.

Young, Oran R. and Michael Zürn. 2006. 'The International Regimes Database: Designing and Using a Sophisticated Tool for Institutional Analysis.' *Global Environmental Politics* 6(3): 121-143.