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Is There a Democracy–Civil Society Paradox in Global Environmental Governance?

Thomas Bernauer, Tobias Böhmelt, and Vally Koubi*

Many observers of domestic and international affairs regard the increased participation of civil society as one of the most important developments in policy-making over the past few decades.¹ Although who is or should be considered a part of civil society remains contested,² civil society is usually defined in terms of voluntary social relationships as well as civic and social institutions that are distinct from state structures and the market.³ This definition mirrors Steffek and Nanz,⁴ who regard civil society as all actors that have legal personality recognized by at least one country but do not belong to or are not affiliated with official governmental entities. Civil society, thus, includes a wide range of organizations such as community groups, nongovernmental organizations, labor unions, charitable organizations, professional associations, and foundations.

Much of the academic literature views increased civil society participation in a positive light. For instance, many authors claim that civil society can enhance the quality of policy-making by providing information, increasing fairness in procedural and outcome terms, enhancing transparency and accountability, and giving a voice to less powerful social groups in a country.⁵ In fact, civil society is widely regarded as a crucial component of democratic, equitable, and cohesive societies.⁶

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1. Dalton 2005; Matthews 1997.

2. Steffek and Nanz 2007, 3; Castiglione 1998.

3. Albin 1999, 373; Betsill and Corell 2008; Charnovitz 1997, 186; Edwards 2004.

4. Steffek and Nanz 2007.

5. Gordenker and Weiss 1995; Keck and Sikkink 1998; Lipschutz 1992; Wapner 1996.

6. Bailer et al. 2012; Diamond 1994; White 1994.

Environmental non-governmental organizations (ENGOS)—on which this paper concentrates—are a prominent example in this respect. The involvement of ENGOS in global environmental governance has grown enormously over recent decades. ENGOS have become regular participants in negotiation processes and exert clearly visible pressure on states.⁷ Existing research shows that ENGOS can affect international cooperation by generating new norms,⁸ by motivating governments and legislatures to negotiate international agreements,⁹ and by using “their technical, organizational, and lobbying skills”¹⁰ to enhance the ratification of, enforcement of, and compliance with international environmental agreements (IEAs). Furthermore, the existing literature argues that both democracy and ENGOS tend to promote international cooperation, for example by facilitating formal participation in IEAs, when treated as separate factors. Does this imply that the impact of ENGOS is stronger in democracies? Existing research assumes so but does not offer explicit theoretical arguments or empirical support for this assumption. This article addresses this research gap.

We outline three theoretical arguments for why ENGOS may not wield stronger influence in democracies. The net effect resulting from these arguments is a “democracy-civil society paradox” in global environmental governance: we hypothesize that ENGOS generally enhance states’ participation in IEAs. This positive effect, however, decreases with higher levels of democracy. This argument is counterintuitive, since democracy tends to be associated both with a more active civil society and greater international cooperation.

The first argument focuses on the demand for environmental public goods. It notes that democracies are characterized by greater civil liberties and, hence, provide multiple channels—besides ENGOS—through which demands for ratification of IEAs can be expressed. The second argument considers political leaders’ incentives. We argue that democratic policy-makers have strong incentives to satisfy “green” demands through the ratification of IEAs, even when ENGOS are weak or absent. The third argument focuses on collective action problems. Democracies are characterized by stronger competition for political influence among ENGOS. This may weaken the influence of ENGOS (relative to other political actors) on governments’ ratification behavior. All three arguments point in the same direction, namely towards a net effect of a democracy-civil society paradox: the very same forces that initially help ENGOS to form and operate, i.e., democratic regime characteristics, eventually constrain their political influence when it comes to pushing democracies toward more cooperative behavior in global environmental governance.

We employ new data on ENGOS in 153 countries for the period 1973–2006 to assess the empirical relevance of the hypothesized effect, using a quantitative duration model approach that reflects our theory. The results strongly

7. Betsill and Corell 2001; Corell and Betsill 2001; Zürn 1998.

8. Finnemore and Sikkink 1998.

9. Raustiala 1997.

10. Chayes and Chayes 1993, 204.

support the argument: the positive effect of ENGOs on countries' ratifications of IEAs can be observed on average, but it is clearly weaker in democracies than in non-democratic regimes.

Determinants of IEA Ratification

Existing research primarily focuses on five types of determinants of international cooperation as measured in the form of countries' participation in IEAs: (1) treaty design characteristics; (2) economic globalization; (3) political regime type; (4) ENGOs and their leverage; and (5) contingent behavior of countries, where a country's cooperative behavior is influenced by other countries' actions.¹¹ Some of the most robust empirical findings in this literature pertain to a positive impact of democracy and ENGOs, respectively, on countries' cooperative behavior.

With respect to democracy, several authors argue that democracies, relative to non-democracies, are more likely to provide environmental public goods, i.e., environmental quality at the national level,¹² and are more inclined to cooperate in international environmental problem-solving efforts as well.¹³ The underlying argument is that democratic governments depend on the median voter for their political survival and therefore tend to provide more (environmental) public goods than autocratic regimes.¹⁴ In democratic states, constituencies also benefit from greater civil liberties, including freedom of speech, press, and association. These enable them to voice concerns over environmental problems more effectively both at the national and international level.

Empirically, Neumayer, for example, finds that democracies are more likely than autocracies to participate in several IEAs.¹⁵ He concludes that "a spread of democracy around the world will lead to enhanced environmental commitment worldwide."¹⁶ Similarly, Fredriksson and Gaston¹⁷ and Neumayer¹⁸ examine the impact of various country characteristics on the time elapsed until countries ratified the UN Framework Convention on Climate Change (UNFCCC), and treaties on endangered species, biological diversity, and ozone layer depletion. Both studies find evidence that democratic countries join these agreements faster than non-democracies. Also, Bernauer et al. analyze a sample of global environmental treaties between 1950 and 2000.¹⁹ They con-

11. Bernauer et al. 2010; Beron et al. 2003; Congleton 1992; Frank 1999; Fredriksson and Gaston 2000; Fredriksson et al. 2007; Murdoch et al. 2003; Neumayer 2002a; 2002b; Perrin and Bernauer 2010; Roberts et al. 2004; von Stein 2008; Zilbauer 2005.

12. Fredriksson et al. 2005; Lake and Baum 2001; McGuire and Olson 1996; Payne 1995.

13. Bernauer et al. 2010; Congleton 1992; Neumayer 2002a; Ward 2006.

14. Bueno de Mesquita et al. 2003; Downs 1957.

15. Neumayer 2002a.

16. Beron et al. 2003; Congleton 1992; Neumayer 2002a, 158.

17. Fredriksson and Gaston 2000; von Stein 2008.

18. Neumayer 2002b.

19. Bernauer et al. 2010.

clude that democracies are more willing to ratify such agreements, although this effect appears to stem from political systems' demand side: greater civil liberties allow for more public pressure on governments to behave cooperatively at the international level.

With respect to ENGOs, the existing literature claims that strong networks of ENGOs create political leverage over governments.²⁰ This leverage can be used to push governments toward more international cooperation—even in the absence of strong government incentives for doing so in the first place. ENGOs may, in this context, act as instigators, organizers, and amplifiers of public demand for more environmental protection. Increased public demand then creates incentives both for opportunistic and sincere policy-makers to negotiate and, subsequently, ratify IEAs.²¹

Empirical research on the impact of ENGO leverage, however, tends to suffer from incomplete or inaccurate data for the main explanatory variable, i.e., ENGOs, due to missing values, low reliability, or a limited scope stemming from purely cross-sectional designs. Still, several studies obtain some empirical support for the hypothesis that ENGOs positively influence environmental cooperation. For example, Roberts et al.²² use a cross-sectional design for studying the ratification rates of 22 IEAs between 1946 and 1999. They observe that one of the most important predictors of countries' cooperative behavior is pressure from civil society as measured by the number of ENGOs registered in a country. Roberts et al. conclude that "the number of [E]NGOs in a nation appears virtually synonymous with its likelihood to participate in environmental treaties."²³ Moreover, Zilbauer examines ratification delays with respect to five IEAs as a function of ENGO influence, among other factors.²⁴ He finds that ENGOs reduce ratification delays in four out of five agreements.

Finally, Fredriksson and Ujhelyi argue that a large number of veto players in a political system makes lobbying more costly for ENGOs and, consequently, it reduces the positive impact of ENGOs on countries' treaty participation.²⁵ These scholars use duration models to analyze this argument for one particular IEA, the Kyoto Protocol to the UNFCCC. While it remains unclear whether this argument applies to other IEAs, the results support their theory: increased ENGO leverage motivated countries to ratify the Kyoto Protocol more rapidly,

20. Binder and Neumayer 2005, 530.

21. Many such agreements may, in reality, be weak or deficient in terms of their environmental problem-solving effectiveness. However, joining such agreements still is a highly visible political action by which policy-makers can demonstrate their environmental commitment to the public.

22. Roberts et al. 2004.

23. Roberts et al. 2004.

24. Zilbauer 2005. These IEAs are the United Nations Convention to Combat Desertification, the Cartagena Protocol on Biosafety, the Copenhagen Amendment to the Montreal Protocol, the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

25. Fredriksson and Ujhelyi 2006.

but this effect declines with more veto players in a given political system. In a related study, Fredriksson et al. argue that ENGOs find it easier to lobby policy-makers in countries with high levels of corruption. They find that ENGOs facilitated the ratification of the Kyoto Protocol, while this effect—perhaps counterintuitively—was stronger in more corrupt countries.²⁶

In the next section, we develop a theoretical argument that builds on an inconsistency between the “conventional wisdom” and the argument by Fredriksson and Ujhelyi.²⁷ Conventional wisdom assumes that the effect of ENGOs increases with higher levels of democracy, because environmental interests, i.e., the median voter demand for (environmental) public goods, can be promoted more effectively in countries with strong democratic traditions. Fredriksson and Ujhelyi,²⁸ however, claim that the positive effect of ENGOs on countries’ participation in IEAs decreases with a higher number of veto players in the political system, and democracies tend to have more veto players than non-democracies.

ENGOs, Democracy, and the Ratification of IEAs

Typically, ratification is necessary for a country to be legally bound by an IEA.²⁹ Although IEAs per se do not solve environmental problems, they are formal and legal expressions of countries’ political commitments to address these problems. Joining such IEAs is usually costly, because it imposes at least some constraints on countries’ behavior.

We are concerned with the combined effect of ENGOs and political regime type on countries’ ratification behavior vis à vis IEAs.³⁰ Although the partial and separate effects of both ENGOs and democracy on IEA participation are likely to be positive, we argue that the positive influence of ENGOs decreases at higher levels of democracy. This contingent effect of ENGOs is counterintuitive for two reasons. First, the existing literature offers convincing theoretical arguments as well as empirical evidence for the cooperation-promoting effects of both democracy and ENGOs. Second, democracy is associated with more civil liberties which enable ENGOs to flourish. Hence, democracy is likely to influence both ENGOs and international cooperation, while ENGOs per se are also likely to have an effect on cooperation. Figure 1 summarizes the hypothesized impact. We arrive at this hypothesis on the basis of three interrelated arguments: the public demand for environmental protection, government incentives to meet such demand, and collective action problems that civil society might face in democracies.

26. Fredriksson et al. 2007.

27. Fredriksson and Ujhelyi 2006.

28. Fredriksson and Ujhelyi 2006.

29. We distinguish IEA ratification from participation in international negotiations and the signing of an IEA. The reason is that countries may participate in negotiating an IEA and/or also sign it, but ultimately fail to formally and fully join that agreement.

30. More specifically, we focus on the time elapsed until ratification occurs.

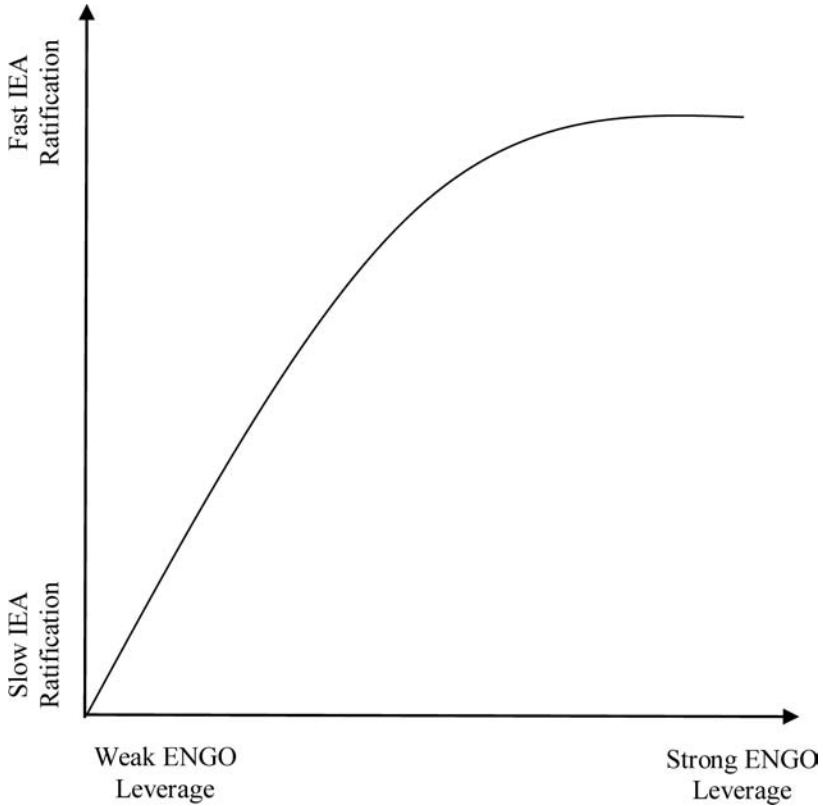


Figure 1.
Expected Effect of ENGOs on Treaty Ratification in Democracies

Public Demand for Environmental Protection

The first argument holds that the impact of ENGOs on a country's ratification of IEAs is likely to be less in democratic than non-democratic regimes, because democratic political procedures and processes are per se and *ex-ante* more conducive to "greener" policies. Payne, for example, shows that democracies are more likely than non-democratic regimes to protect their natural environment, since democracies are characterized by more civil liberties, e.g., freedom of speech, press, and association.³¹ These liberties imply that people are better informed by independent mass media and other sources about environmental problems and governmental policies. Democratic constituencies also have more opportunities to freely express their opinions and organize around alternative political views. Hence, they can impose higher audience costs on policy-makers

31. Payne 1995.

who renege on electoral promises.³² Consistent with this argument, Page and Shapiro highlight that there is substantial congruence between public opinion and governmental policies in democratic systems, and that shifts in public opinion tend to cause policy changes in such systems—especially with respect to issues that are considered to be salient by society.³³

Thus, for any given level of environmental risk exposure, people in democratic countries have greater opportunities than their counterparts in non-democratic systems to obtain information on environmental problems and potential actions for their mitigation. Moreover, if people in democracies are concerned about environmental problems, they can engage in multiple types of action aimed at pushing their government toward stronger environmental commitment.

Consequently, more civil liberties are associated with a greater variety of sources of information as well as a greater scope and scale of potential actions of people vis-à-vis the government. These conditions reduce the importance of ENGOs as instigators, organizers, and amplifiers of public demand, because more civil liberties allow for channels other than ENGOs through which environmental information is disseminated and environmental concerns can be expressed. Therefore, the influence and importance of ENGOs as public demand instigators, organizers, and information providers decreases with higher levels of democracy in a political system. This, in turn, reduces the ENGO impact on ratification of IEAs.

Government Incentives to Meet Public Demand

The median voter in democratic systems has a major impact on the government provision of public goods, in our case, environmental quality.³⁴ Democratic political leaders have strong incentives to satisfy their constituencies' environmental policy demands to obtain and retain political office.³⁵

Bueno de Mesquita et al. argue that political selection processes influence the extent to which governments provide public goods relative to private goods.³⁶ At the core of their argument on why democracies outperform non-democratic regimes in public goods provision is the rationale that political leaders must ensure the continuous support and satisfaction of their winning coalition. The latter is the group of people whose support is decisive for political leaders to obtain or retain office. In contrast to democracies, non-democratic political leaders typically depend on the support of a smaller winning coalition. This coalition can be compensated with private selective incentives that only benefit those supporting the leader. The benefits of public goods provision,

32. Slantchev 2006.

33. Arrow 1963; Dahl 1956; Downs 1957; Page and Shapiro 1983.

34. Congleton 1992; Lake and Baum 2001; McGuire and Olson 1996; Niskanen 1997; Olson 1993.

35. Downs 1957.

36. Bueno de Mesquita et al. 2003.

however, are more uniformly distributed among the population. As a result, if non-democratic leaders decide to invest more in public goods rather than accumulating rents and supplying their small, supporting coalition with private goods, a country's elite would incur disproportionately high opportunity costs due to the spending of tax revenues and other resources on public goods provision. The median voter in a democracy, in contrast, incurs lower marginal costs of public goods provision, relative to the average member of the economic and political elite in a non-democracy. This circumstance generates incentives for democratic governments to provide public goods.

In other words, democratic political leaders are responsive to a larger winning coalition and lack sufficient resources to reward their comparatively large group of supporters with private goods. Therefore, they resort to the provision of public goods to ensure political support and survive in office. These political-survival considerations compel democratic policy-makers to provide more public goods—including environmental quality—than their non-democratic counterparts. In our context, this means that joining an IEA—and doing so promptly—is an important opportunity for governments to signal their commitment to the provision of environmental public goods. Policy-makers in democratic systems have this incentive even if ENGOs are weak or absent, because it derives from general political system characteristics and median voter preferences, rather than ENGOs per se. As a result, the impact of ENGOs on states' behavior vis à vis IEAs is likely to be weaker in more democratic countries.

Problems of Collective Action in Democracies

Relative to non-democracies, democratic political systems provide more opportunities for ENGOs to form and operate,³⁷ which seems conducive to ENGO leverage over state actors. As a result, we should expect the leverage of a strong ENGO network to drive governments toward more international environmental cooperation.

One factor that might work against this assumption is a collective action problem. Larger ENGO networks are more likely to encounter coordination problems that reduce their effectiveness in pushing governments toward greener policies.³⁸ Although larger ENGO networks are likely to create more leverage, the marginal environmental policy returns may become smaller with more ENGOs. Organizational, lobbying, and campaigning costs increase with the number of ENGOs because, as an ENGO network becomes larger, the interests of its members become more heterogeneous.³⁹ Increased heterogeneity hin-

37. Dalton 2005.

38. Olson 1965, 46ff; Chamberlain 1974.

39. Snidal 1994.

ders efforts to reach and maintain consensus on how government actors should be influenced and to what end.⁴⁰

Using a political market analogy, stronger competition between ENGOs for access to and influence over policy-makers may constrain the influence of ENGOs as a whole, as compared to an oligopolistic market, in which a small number of ENGOs competes for political influence. In the words of one ENGO member: “when so many different [ENGO] 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.”⁴¹

Increased competition of this kind is more likely to occur in democracies because the latter provide more opportunities for ENGOs to form and operate. Again, this means that the ENGO effect on participation in IEAs should be positive on average, but decreases with higher levels of democracy in a political system. This argument is somewhat similar to that of Fredriksson and Ujhelyi, who claim that more veto players decrease the positive impact of ENGOs on the likelihood that a country will ratify any given IEA.⁴² However, our theoretical rationale for this effect is different. While Fredriksson and Ujhelyi assume that veto players have resolved their collective action problem, we view such problems as one of several factors that reduce ENGO leverage.

In sum, the three arguments developed in this section reinforce each other. We should expect a positive effect of ENGOs on country participation in IEAs. But this impact is likely to be smaller in countries that are highly democratic. Although the three arguments outlined here are distinct, we do not regard them as separate causal mechanisms that require separate and explicit comparison, but rather as a set of related theoretical reasons for expecting a declining ENGO effect as level of democracy increases. Consequently, the following empirical analysis focuses on the net effect of ENGOs on countries’ participation in IEAs.

Research Design

Dependent Variable and Methodology

Our empirical evaluation focuses on countries’ ratification behavior vis-à-vis IEAs, and in particular the time elapsed between signature and ratification. We concentrate on duration because we interpret the differences in time that countries need to ratify an IEA as reflecting relative preference intensities. More rapid ratification signals a strong commitment to global environmental cooperation.⁴³ Hence, we define our dependent variable as the time (in years) between

40. Axelrod and Keohane 1985, 234f; North 1990, 57; Olson 1965, 36ff.

41. Bernstein et al. 1992.

42. Fredriksson and Ujhelyi 2006.

43. Fredriksson and Gaston 2000.

the date when an IEA becomes open for ratification and the date a country ratifies that agreement.

The data for ratification behavior are taken from Bernauer et al.⁴⁴ Following these scholars, we treat different legal expressions of formally joining a treaty, e.g., accession, as equivalent to ratification. We also drop treaties that do not deal with environmental issues as central concerns. And finally, we omit IEAs that opened for ratification before 1973⁴⁵ or that are not open to all countries globally. The resulting dataset covers 153 countries and 268 global environmental treaties between 1973 and 2006.⁴⁶ The unit of analysis is the IEA-country-year, i.e., each IEA is paired with each country that could potentially ratify this IEA in a given year. IEAs enter the dataset as soon as they become open for ratification. Each IEA-country pair remains in the dataset until the year the respective country ratifies the IEA and is then dropped.⁴⁷ All of our explanatory variables described below vary over time. Because a change in any of these variables requires a new spell or observation, our unit of analysis is equivalent to such a specific spell. In total, we obtain 555,175 spells. Out of the 41,004 IEA-country pairs in the dataset, 31,077 are right censored, i.e., ratification did not take place by 2006, 2002, and 2000, respectively. The average ratification duration of a country is 9.67 years.

Since we do not impose a particular functional form of the baseline hazard of ratifying an agreement, we estimate Cox proportional hazards models. This leaves the duration dependency unspecified and focuses the empirical analysis on how the covariates shift the baseline hazard. Checking our models and variables for violation of the proportionality assumption showed the proportionality assumption was violated in some of our models. However, including interaction terms for all explanatory variables with some pre-defined function of time⁴⁸ does not change the substance of our results. More specifically, we obtain opposite signs and very small coefficients for our main variables of interest, i.e., ENGO leverage and level of democracy, and the interaction term between these two. A sign opposite to that of the constituent term indicates decay in the original effect. The rate of the time trend is indicated by the coefficient for the interaction with time in relation to the constituent term. If the interaction term with time is small in comparison, the effect changes slowly over time; if it is large, then the effect changes quickly. Exponentiating the ratio of the constituent coefficient to the interaction coefficient indicates the point in time at which

44. Bernauer et al. 2010.

45. We cross-checked our findings by including pre-1973 data. The results do not change in substantive ways.

46. The time-period covered by the analysis varies due to data limitations for most of our explanatory variables. While Model 1 below focuses on the maximum period possible, i.e., 1973-2006, Models 2 and 3 are based on data for 1973-2002, and Model 4 on data for 1973-2000.

47. Keeping an IEA-country observation in the data after ratification occurred would bias our findings, since this treatment would induce that a country ratifies again and again in each subsequent year.

48. Box-Steffensmeier and Zorn 2001; Box-Steffensmeier et al. 2003; Box-Steffensmeier and Jones 2004, 131ff.

an effect “flips” from positive to negative or vice versa.⁴⁹ For example, we estimated that the effect of *ENGO* dies out after about 9,902 years in Model 1 below. Hence, we omit interaction terms with a function of time to facilitate interpretation.

Explanatory Variables

Our two main explanatory variables are the political leverage of ENGOs and a country’s level of democracy. We define *ENGO* leverage in terms of the number of national ENGOs⁵⁰ registered in a country.⁵¹ We collected the data for the time period 1973–2006 in the archives of the International Union for Conservation of Nature (IUCN). The IUCN claims to be “the world’s largest and most important conservation network,” with a “mission to influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature.”⁵² Its members include national and international ENGOs, government agencies, and scientists from 181 countries. Although the IUCN covers most countries of the world, it is essentially an umbrella organization where membership is not mandatory and ENGOs do not have to register. As a result, our data collection efforts may have omitted some ENGOs that have not registered with the IUCN. However, our approach was more efficient than collecting ENGO data from other sources, and we believe that IUCN’s broad and extensive coverage allows us to generate a valid and reliable proxy for the political leverage of ENGOs.

To measure a country’s level of democracy, we use the combined *polity2* variable from the Polity IV project, which ranges from –10 (full autocracy) to +10 (full democracy).⁵³ Since the original data do not include information for microstates, we impute missing values with data from Gleditsch,⁵⁴ who provides information on these countries until 2002. This operationalization may actually pick up the effect of veto players instead of democracy.⁵⁵ Indeed, there is a highly significant correlation between *Democracy* and Henisz’s *POLCONIII* index⁵⁶ in our dataset (0.7544). However, the correlation between *Democracy* and *ENGO* and between *Democracy* and Henisz’s *POLCONIII* index is 0.31 and 0.90, respectively, while tests showed that the two estimates differ significantly. We also re-estimated our baseline models with Henisz’s *POLCONIII* index instead of *Democracy*: the effect of the interaction term of *ENGO* and *POLCONIII* is insignificant. These results indicate that our results for the *Democracy-ENGO*

49. Box-Steffensmeier and Zorn 2001.

50. See also Fredriksson and Ujhelyi 2006.

51. Despite their “national” characteristic, these ENGOs are involved in international issues and act at the global level—otherwise they would arguably not interact with the IUCN.

52. IUCN 2006.

53. Marshall and Jaggers 2004.

54. Gleditsch 2008.

55. Fredriksson and Ujhelyi 2006.

56. Henisz 2002.

interaction term do not pick up the conditioning effect of veto players despite the fact that *Democracy* and Henisz's *POLCONIII* are highly correlated. Finally, to model the conditional effect of *ENGO*, which serves to evaluate the democracy-civil society paradox, we also consider a multiplicative term between *Democracy* and *ENGO*.

With regard to control variables, we employ those used in Bernauer et al.⁵⁷ to capture alternative factors that may influence ratification behavior.⁵⁸ First, we include Correlates of War Project data on a country's membership in international organizations (*IO Membership*), using the number of IOs of which a country is a member in a given year.⁵⁹ Second, we include a country's trade intensity, measured as the ratio of the sum of exports and imports to GDP (*Trade Intensity*).⁶⁰ Third, we add a variable counting the total number of states in the international system that had ratified the IEA in question (*Number of Countries Ratified*). We also include two variables measuring the percentage of countries from the same region (*Percent of Region Group Ratified region*) and same income group that had ratified the IEA in question (*Percent of Income Group Ratified*). Fourth, there is income, measured as the log value of GDP per capita (*GDP per capita*). Given the arguments on the Environmental Kuznets Curve, we also include the square of income. Fifth, the state of the domestic environment may also influence ratification behavior. Thus, we add the log of SO₂ emissions per capita (*SO₂ per capita*), as this type of pollution is arguably the most common form of air pollution. Finally, we include the log of GDP to capture a country's economic power (*GDP*).

Empirical Findings

Table 1 summarizes the main results of our empirical analysis. We report non-exponentiated coefficients: higher values for each explanatory variable signify faster ratification (i.e., positive coefficients indicate an increasing hazard and negative coefficients indicate a decreasing hazard). We begin with a bivariate model that only includes *ENGO*. In Model 2, we add *Democracy*, while Model 3 constitutes our baseline model, including *ENGO*, *Democracy*, and their interaction term. Model 4 adds the control variables.

Table 1 shows that the estimated risk of ratification increases by 3 percent for each additional *ENGO* active in a country (Model 1). With the inclusion of *Democracy* (Model 2), this positive and rather substantial effect changes to 1.8 percent, with a one-unit increase in *Democracy* leading to a 6.2 percent in-

57. Bernauer et al. 2010. If not stated otherwise, the data for our control variables have been taken from this source.

58. Beron et al. 2003; Congleton 1992; Frank 1999; Fredriksson and Gaston 2000; Fredriksson et al. 2007; Murdoch et al. 2003; Neumayer 2002a; 2002b; Perrin and Bernauer 2010; Roberts et al. 2004; von Stein 2008; Zilbauer 2005.

59. Singer 1988.

60. Data from Gleditsch 2002.

Table 1

Results from Cox Proportional Hazards Models for Time until IEA Ratification

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
<i>ENGO</i>	0.030 (0.001)***	0.018 (0.002)***	0.035 (0.008)***	0.056 (0.007)***
<i>Democracy</i>		0.062 (0.003)***	0.065 (0.003)***	0.029 (0.004)***
<i>ENGO*Democracy</i>			-0.002 (0.001)**	-0.006*** (0.001)***
<i>IO Membership</i>				0.013 (0.001)***
<i>Trade Intensity</i>				-0.083 (0.035)**
<i>Number of Countries Ratified</i>				-0.013 (0.001)***
<i>Percent of Income Group Ratified</i>				0.031 (0.001)***
<i>Percent of Region Group Ratified</i>				0.050 (0.001)***
<i>GDP per Capita</i>				1.544 (0.317)***
<i>GDP per Capita²</i>				-0.091 (0.019)***
<i>SO₂ per Capita</i>				0.062 (0.019)***
<i>GDP</i>				0.003 (0.027)
N	371,297	248,282	248,282	204,048
Log Likelihood	-47,114.71	-37,435.78	-37,433.33	-29,826.90
Time at Risk	350,371.8	228,270	228,270	184,741.1
Time Period	1973–2006	1973–2002	1973–2002	1973–2000
Likelihood Ratio χ^2	371.97***	822.03***	826.94***	10,360.02***

Standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1% (two-tailed).

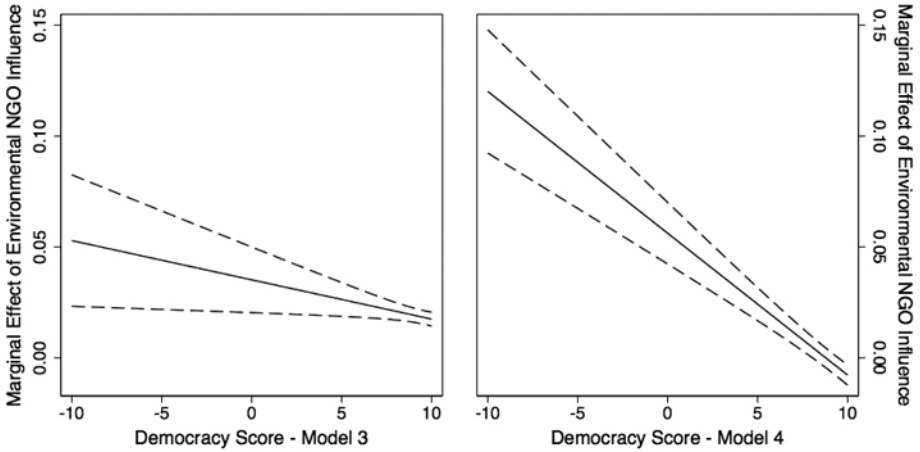


Figure 2.

Effect of ENGO Leverage on Treaty Ratification, Conditional on Democracy

Dashed lines indicate the 95% confidence interval.

crease in the estimated risk of ratification. Yet, only Models 3 and 4 include the interaction term that directly tests our argument. We cannot, however, directly interpret the components of a multiplicative specification in Table 1.⁶¹ Therefore, we recalculated the non-exponentiated coefficients for *ENGO* according to *Democracy* to allow for the substantive interpretation depicted in Figure 2.⁶²

Figure 2 offers strong support for the democracy-civil society paradox. Although we still see a positive contribution of ENGO leverage to faster IEA ratifications, this effect is stronger for non-democratic countries with the influence of *ENGO* exhibiting only a marginal impact in democracies. The estimated risk of ratification increases by 5.6 percent if one more ENGO is active in a full autocracy (Model 3). This ENGO effect is much stronger than in Models 1 or 2, which do not consider the interaction between *ENGO* and *Democracy*. The impact of *ENGO* then decreases and reaches a positive and still significant value of 1.5 percent (Model 3) in full democracies.

Figure 2 also reveals that the slope of the marginal *ENGO* effect is steeply negative, with a negative and significant coefficient estimate for *ENGO* in Model 4 even for countries with a *Democracy* score of +9 or higher. This negative effect is substantively rather small, however, with an estimated risk of ratification of about -0.04 percent. We interpret this result as indicating that the marginal effect of ENGO leverage disappears in highly democratic countries, and that more

61. Brambor et al. 2006; Braumoeller 2004.

62. Braumoeller 2004, 815ff.

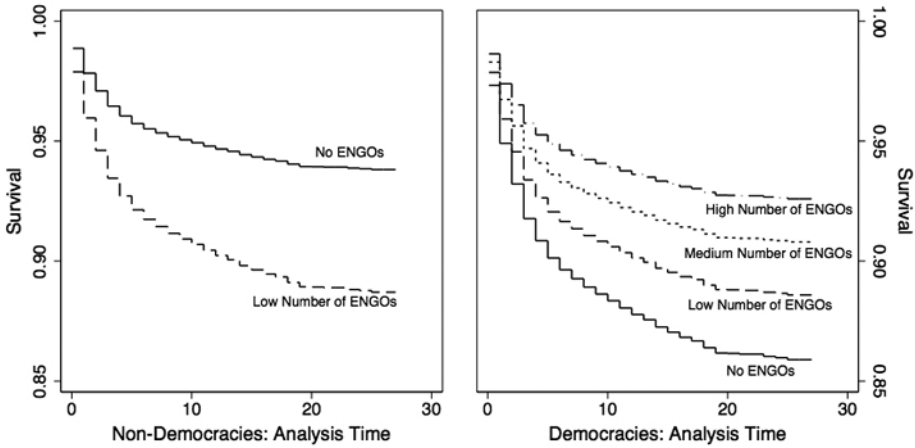


Figure 3.

Estimates of Survival Functions, According to *ENGO* Leverage and Regime Type

The two panels show survival functions based on semi-parametric Cox Model estimations while all other variables are held at their mean values.

ENGO leverage may, in the extreme, slow down ratification in such states to some degree.

Figure 3 illustrates our key finding in a more nuanced way. We recoded *ENGO* into four categories and estimated different survival functions that are based on the estimates in Model 4. The categories of the recoded *ENGO* variable reflect the main characteristics of the original *ENGO* variable: 0 = no ENGOs registered in the country; 1 = 1–29 ENGOs registered in the country; 2 = 30–59 ENGOs registered in the country; 3 = 60–82 ENGOs registered in the country. Using these categories, we examine non-democracies (countries with a *Democracy* score of less than +7) and democracies.⁶³

This figure mirrors the results shown in the right panel of Figure 2. ENGO leverage fosters speedy ratification of IEAs. ENGOs have a powerful marginal effect in non-democratic countries, but this effect disappears in highly democratic countries. The left panel of Figure 3 indicates that the difference in impact between “no ENGOs” and “1–29 ENGOs” is around –6 percent in non-democracies. This means that more ENGO leverage in non-democratic countries has a strong ratification-promoting effect.

Figure 3 also highlights an unexpected result. We observe that ratification speed increases by almost 15 percentage points in highly democratic countries that lack ENGO leverage. We are reluctant to interpret this finding in the sense

63. One caveat here is that neither category 2 nor 3 empirically appears in non-democratic states.

that ENGOs make global environmental treaty participation more difficult in democratic countries. One possible interpretation of this result is that highly democratic governments in a state with a strong ENGO network are likely to face stronger pressure to fully and more rapidly implement any given international obligation. Such countries may also be more likely to agree to more ambitious obligations in a given IEA. One example is the Kyoto Protocol, which allocates different emission reduction targets to different countries. To the extent that these assumptions hold true, highly democratic countries with a strong ENGO network are then likely to face higher implementation costs, relative to highly democratic countries that lack ENGO leverage. In other words, it is possible that the impact of ENGOs declines over the ratification process in highly democratic countries with increases in demand and, therefore, implementation costs. The US, which actively participated in negotiating the Kyoto Protocol, but then failed to ratify this treaty, is a prominent example here.

Concerning the control variables, the effects of *IO Membership*, *Trade Intensity*, *Percent of Region Group Ratified*, *GDP per Capita* and its squared term, and *SO₂ per Capita* are all in line with results reported in the existing literature. Membership in international organizations significantly decreases the duration until ratification occurs. The same holds for the percentage of countries of the same region that ratified an IEA and for domestic environmental conditions. We also find evidence for a curvilinear relationship between *GDP per Capita* and ratification duration. A country's trade openness contributes to slower ratification. In contrast to findings by Bernauer et al.,⁶⁴ ratification by a given country becomes slower when a larger share of all other countries has already ratified. Similarly, a larger share of ratifiers in the same income group has a ratification-retarding effect. The impact of countries' economic size is insignificant.

To assess the robustness of our findings, we ran various alternative model specifications. These robustness checks are not discussed here, but are summarized and can be replicated via files that are available from the authors and at <http://www.ib.ethz.ch/research/data>. The findings from these specifications support the results reported here.

Conclusion

The existing literature offers well-developed arguments and empirical evidence for why democracy and civil society are likely to foster international cooperation. In dealing with both factors separately, however, it assumes that the combined effect is also positive and at least as strong as—or perhaps stronger than—the sum of their individual effects.

This paper addresses this conjecture from a theoretical viewpoint, with an empirical focus on how ENGO leverage influences countries' participation in

64. Bernauer et al. 2010.

global environmental agreements. We developed three distinct theoretical arguments, all of which point to the same outcome, i.e., towards a democracy-civil society paradox in global environmental governance. The resulting claim is that the impact of ENGOs on international cooperation is generally positive but is likely to decrease or even disappear at high levels of democracy. This proposition cuts against conventional wisdom and appears paradoxical because democracy is generally associated both with a more active civil society and more international cooperation.

We based the empirical analysis on a dataset that combines information on IEA ratifications with new data on ENGOs for the time period 1973–2006. The results strongly support our theory. Although the marginal effect of an additional ENGO on the ratification of IEAs is strong and positive in the case of non-democracies, this effect fades and, in the extreme, becomes negative in highly democratic countries. To our knowledge, this is the first study to systematically examine the combined effect of ENGOs and democracy on participation in IEAs.

From a normative perspective, our results cannot—and, we think, should not—be used to advocate the obsolescence or irrelevance of ENGOs in democracies. Our argument concerns the *marginal* rather than the absolute political leverage of ENGOs. It means that each additional ENGO in a less democratic system helps to promote that country's cooperative behavior in global environmental governance more than an additional ENGO in a democracy. The obvious policy implication is that strengthening ENGOs in less democratic countries can help considerably in overriding the generally negative autocracy effect on international cooperation.

Our findings suggest interesting questions that are worth pursuing in further research. For instance, it would be useful to move beyond the one-dimensional democracy-autocracy scale and investigate the role of civil society in different types of democratic and autocratic regimes. Second, our research addresses only one aspect of global environmental governance, i.e., treaty ratification. Further research could build on our efforts and study the joint impact of civil society/ENGOs and democracy in other facets of international cooperation, such as agenda-setting, negotiation, or treaty implementation. Finally, it would be interesting to examine whether our theoretical argument is empirically relevant in other policy areas, such as human rights or arms control, where civil society actors have very actively pushed for more international cooperation as well.

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