

National and Global Origins of Environmental Association

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Abstract

We examine the origins of voluntary associations devoted to environmental protection, focusing on the divergent trajectories of industrialized versus developing countries. We consider a wide range of domestic economic, political, and institutional dynamics that give rise to environmental associations. Developing and extending neo-institutional world polity arguments, we characterize domestic association in the developing world as the product of global cultural models, legitimation, and resources. Using event history and dynamic panel models, we analyze the formation of domestic environmental associations for a large sample of countries in the contemporary period. Among highly industrialized countries, domestic factors—resources and political institutions that afford favorable opportunities—largely explain the prevalence of environmental associations. In contrast, global forces are a powerful catalyst for environmental organizing in the developing world. The environmental movement, which had domestic origins in the West, became institutionalized in the world polity, generating new associations on a global scale. We also find positive effects of democratic institutions and philanthropic foundations. Environmental degradation and societal affluence are not primary drivers of environmental association. We conclude by reflecting on the implications of globally-sponsored voluntary associations, which appear to be common in the developing world.

Keywords

social movements, environment, neo-institutionalism, globalization, voluntary associations

Voluntary associations have garnered a great deal of attention as a source of social capital and public goods, and as an infrastructure for social movements (e.g., McAdam, McCarthy, and Zald 1996; Paxton 2002; Putnam 2000; Reimann 2006). Where do these associations come from? We explore the origins of environmental associations throughout the world, focusing on the sharply different trajectories observed in highly industrialized versus less industrialized countries.

Environmental associations have proliferated worldwide in recent decades, ranging from household names like the Sierra Club in the United States to a host of less familiar

groups, such as the Swedish NGO Secretariat on Acid Rain (founded in 1982), the Algerian Ecological Movement (1993), and the Bangladesh Environmental Lawyers Association (1992). This diverse population represents an organizational base for the

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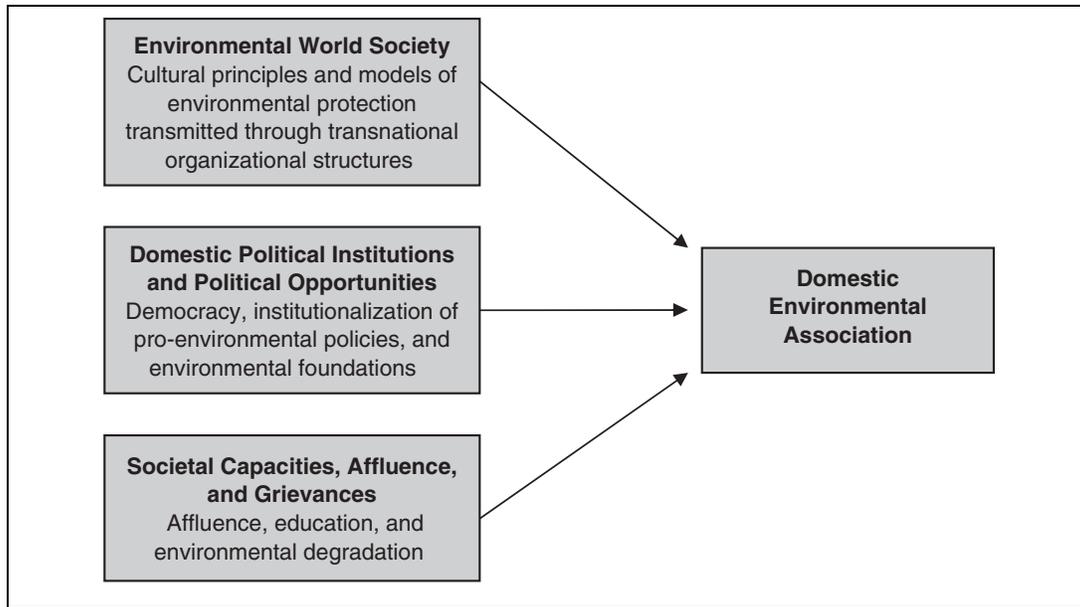


Figure 1. Three Sources of Environmental Association

environmental movement and is a potent source for political change (Brulle 2000).

Popular accounts treat the environmental movement—and pro-environmental associations more specifically—as a grassroots response to the tragedy of environmental degradation (e.g., Shabecoff [1993] 2003). Scholarly accounts by historians and environmental sociologists frequently retain some of this flavor, but they emphasize the requisite capacities for mobilization and political participation, such as wealth, organizing skills, and pro-environmental values.

We draw on ideas from social movements, sociology of the state, and neo-institutional theory to situate the formation of environmental associations within a broader political and cultural context. In addition to testing arguments about the importance of national institutions and opportunity structures, we posit that global institutions and culture drive the expansion of domestic association, particularly in the developing world (see Figure 1). Prior neo-institutional, or world polity, scholarship has examined the diffusion and consequences of pro-environmental state policies (e.g., Frank, Hironaka, and Schofer 2000;

Schofer and Hironaka 2005). We go beyond this work, arguing that the world polity not only affects the state but penetrates down into civil society as well, with transformative consequences.

We use event history and dynamic panel models to analyze the formation of domestic environmental associations during recent decades in more than 100 countries. Our study speaks to environmental sociologists regarding the origins of the global environmental movement's infrastructure. Moreover, our attention to the developing world is distinctive in a subfield that largely focuses on the United States and Western Europe (e.g., Bosso 2005; Brulle 2000; Diani 1995; Faber 1998; Gottlieb 2005; Shaiko 1999; but see Broadbent 1998; Bunker 1990; Mol and Sonnenfeld 2000).

Our study broadens work on civic association with improved country-level data; we turn attention to the entire world rather than affluent democracies, and we develop arguments about the global origins of putatively “domestic” civil society. We also extend the literature on civic life through our focus on associations themselves rather than citizen participation or membership ties.¹ While prior

work on civic life stresses membership or individual civic engagement, recent scholarship highlights the importance of studying associations as a distinct social phenomenon. For instance, Sampson and colleagues (2005) find that local associations are a key predictor of social movement activity and collective civic participation events, quite separate from the impact of individual membership ties in a community. This article also complements scholarship on transnational movements and advocacy networks, but we argue even more strongly for the importance of global forces in constructing national associational life (Bandy and Smith 2005; Keck and Sikkink 1998; Smith and Johnston 2002).

The empirical core of our study is a new cross-national dataset on domestic environmental associations, compiled from organizational directories (for an earlier cross-national effort, see Rohrschneider and Dalton 2002). Organizational directories are useful resources for political sociologists generally (e.g., Minkoff 2002), and those studying environmentalism in particular (e.g., McLaughlin and Khawaja 2000), but they are not without limitations (Andrews and Edwards 2005; Brulle et al. 2007). We discuss potential limitations in detail below, but a key issue must be raised at the outset: our data sources most effectively measure larger and more mainstream environmental groups. We developed our arguments with that in mind, and findings may not apply to radical environmental groups, “indigenous” environmental movements, or ephemeral or short-lived associations. Understanding mainstream associations—which constitute the most central, resource-rich, and politically influential organizations—is an important contribution, but it does not capture the full scope of contemporary global environmentalism.

BACKGROUND

Our understanding of the global environmental movement stems largely from studies of

environmental organizing in the United States and Western Europe. Scholars have highlighted two periods of intense environmental organizing: the turn of the twentieth century and the post-World War II period (Andrews and Edwards 2005; Brulle 2000; McLaughlin and Khawaja 2000). Environmental associations of the late-nineteenth century focused on preservation, game management and hunting, and conserving natural resources for societal and economic development. Their origins rested in sporting traditions of the United States and Britain, national commitments to economic development and pursuit of the “frontier,” transcendental writings of Thoreau and Emerson, and the urban parks movement of the 1850s (Brulle 2000).

Popular narratives of the contemporary environmental movement begin with the period just after World War II and the rise of various social movements in the 1960s and 1970s. One strand of postwar environmentalism, now dominant, derived from an ecological framework that stressed interdependencies between human life and the natural environment, characterized by rational and universal scientific claims and discourse (Caldwell 1990b; Dunlap and Mertig 1992; Frank 1997). In the United States, formal environmental organizations grew rapidly alongside national legislation such as the Wilderness Act in 1964 and the National Environmental Policy Act in 1969 (Andrews and Edwards 2005). Academics looked to the student movement, the postwar democratic climate, and the emergence of a liberal, highly-educated middle class to explain the rush of environmental activity (Dalton 1993, 1994; Rome 2003). By the 1980s, the environmental movement diversified to incorporate more progressive and radical variants, such as deep ecology, environmental justice, ecofeminism, and what Martinez-Alier (2002) calls “environmentalism of the poor” (Brulle 2000; Faber 1998; McLaughlin and Khawaja 2000; see also Peet and Watts 1996).

In the developing world, by contrast, formal domestic environmental associations were rare until the late 1970s and early 1980s, and they appear in smaller numbers than in industrialized Western nations. The origins of these associations remain overlooked and weakly theorized. The literature focuses on specific campaigns, such as the movement to stop the Planaflo development project in Brazil or the Narmada dam in India (Keck and Sikkink 1998; Rodrigues 2004), or the connections between environmental groups and other social movements, such as local land-based and rights movements (Keck and Sikkink 1998; Taylor et al. 1993). By contrast, we seek to explain why these associations emerged in the first place.

SOURCES OF ENVIRONMENTAL ASSOCIATION

Environmental degradation. The popular press, activists, and scholars have argued that pro-environmental attitudes, policies, social movement activities, and associations originate in response to environmental problems or struggles over natural resources (for an early example, see Walsh 1981; see also Caldwell 1990a; Choucri 1993; Gardner 1995; Sprinz and Vaahtoranta 1994). Polluted waterways beget river conservation organizations, toxic factory emissions beget pollution watchdog groups, suburban sprawl begets open spaces groups, and so on. Social movement research offers a healthy dose of skepticism, pointing out that social problems and grievances are insufficient to produce a movement (McAdam et al. 1996; Tarrow 1998; Tilly 1986, 2003). Indeed, some of history's worst environmental catastrophes were not followed by heightened environmental awareness (Turner et al. 1990). Moreover, a recent study of environmental membership finds little relationship between pro-environmental activity and actual degradation

(Dalton 2005). Nevertheless, the assumption is central to the literature and warrants examination: *countries with greater levels of environmental degradation will have more domestic pro-environmental associations.*

Economic development. Environmentalism and civic association are both seen as products of societal affluence. Modernization scholars argue that national development spurs democratic institutions and modern political behaviors such as participation in voluntary associations (Inkeles and Smith 1976; Lipset 1960). Inglehart's (1997) post-materialism argument asserts that individuals turn to issues such as environmentalism after basic economic needs are met (see also Kidd and Lee 1997). Similarly, ecological modernization theorists argue that advanced capitalism critically enables a variety of pro-environmental changes, ranging from the technological to the social (Mol 2001; Mol and Sonnenfeld 2000; Weidner and Janicke 2002). Indeed, prior studies find participation of affluent citizens in the environmental movements of Europe and North America (Hays 1987; Rome 2003).

However, the connection between national wealth, individual income, and pro-environmental attitudes has received mixed empirical support. Brechin and Kempton (1994, 1997) argue that individual income is a poor predictor of environmental concern, whereas Dunlap and Mertig (1997) actually found a negative relationship between national wealth and environmental attitudes (see also Gelissen 2002). More recently, Dunlap and York (2008) analyzed three waves of the World Values Survey and found an inconclusive relationship between affluence and environmental concern. They argue that environmentalism has spread beyond rich countries, and that social scientists and policy-makers should revise their assumption that the poor cannot afford to take care of the environment.² While these studies raise important questions, we nevertheless test the conventional hypothesis that *countries with higher*

levels of economic development will have more domestic environmental associations.

Education. Classical studies show that education spurs citizen participation and voluntary organizing (Almond and Verba 1963). Education raises awareness of social problems and is a key site for political socialization, as are many extracurricular activities associated with the school experience (McFarland and Thomas 2006). In the 1960s and 1970s, environmental movements in Western Europe relied heavily on student movements and college graduates (Dalton 1993; Rome 2003). Student movements in West Germany and Denmark, and the May Revolts in France, heightened awareness of modernization's ecological effects and later burgeoned into ecological movements (Dalton 1993, 1994; Jamison et al. 1990). Rome (2003) observes that highly educated women, students, and recent college graduates made up a critical mass in the anti-pesticide, open spaces, and Earth Day campaigns in the 1950s and 1960s. We thus expect that *societies with highly-educated populaces will generate more domestic environmental associations.*

The State, Political Opportunities, and Environmental Association

Recent work on voluntary associations highlights the importance of the state, democracy, and political institutions in shaping civic participation (Crowley and Skocpol 2001; Paxton 2002; Schofer and Fourcade-Gourinchas 2001; Skocpol and Fiorina 1999). Likewise, attention to political opportunities and constraints has long been part of the social movements tradition (for a review, see Meyer 2004). How do national and transnational political structures and institutions provide opportunities, resources, and legitimation for environmental association?

Democracy. Following Tocqueville ([1835] 2000), sociologists and political

scientists repeatedly observe that democratic political institutions support civic association (Curtis, Baer, and Grabb 2001; Paxton 2002; Putnam 1993, 2000; but see Ruiter and De Graaf 2006). Democracies offer an open political opportunity structure for social movements and legitimate free association in the public sphere. The democratic climate fueled environmentalism in West Germany, for instance, including the resurgence of the dormant German Federation for Bird Protection and the Nature Protection Federation of Bavaria (Dalton 1993). We thus expect that *democratic societies will have more domestic environmental associations than will nondemocratic societies.*

National institutionalization of environmentalism. The state's embrace of pro-environmental policies and legislation—for example, creating ministries, adopting clean air and water laws, and assessing environmental impacts of development projects—opens up avenues for effective domestic mobilization and protest (McAdam et al. 1996; Meyer 2004; Tarrow 1998). For instance, environmental impact assessment (EIA) laws operated as a “node for conflict” for citizens to challenge government or private-sector development activities, creating a huge incentive to form new organizations (Hironaka 2002; Hironaka and Schofer 2002). Many environmental organizations in the United States formed after landmark legislation was passed in the late 1960s, such as the Wilderness Act of 1964 and the National Environmental Policy Act of 1969 (Andrews and Edwards 2005). Some laws, such as the Clean Water Act of 1972, included mandates requiring citizen participation (Sirianni and Friedland 2001). In addition to providing favorable opportunity structures and incentives, state laws legitimate environmental concerns and place the issue squarely on the public agenda—and agenda setting is critical to political mobilization and successful organizing (Crenson 1971). In summary, we expect that *national institutionalization of*

pro-environmental policies increases the formation of environmental associations.

Environmental foundations. As Brulle and Jenkins (2005) point out, philanthropic foundations have long provided financial resources to the U.S. environmental movement. They estimate that grants from the Ford Foundation, Rockefeller Foundation, and others make up one-eighth of environmental organizations' financial resources. Similarly, foundations played a key role in the emergence of forest certification in the United States, providing funding for some environmental groups and institutional support for others (Bartley 2007). Foundations also had a paradoxical impact on the U.S. environmental movement, providing the financial resources necessary for short term success while simultaneously channeling groups away from more radical goals (Brulle and Jenkins 2005). Nevertheless, foundations provide domestic resources that may spur the formation of new organizations; we thus expect *environmental foundations to increase the formation of environmental associations.*

World Society and Environmental Association

Movements and civic associations have become profoundly transnational (Bandy and Smith 2005; Boli and Thomas 1999; della Porta et al. 2005; della Porta and Tarrow 2005; Smith and Johnston 2002). Much work focuses on the transnational dimensions of social movements, but fewer scholars look at how transnational structures may actually reach down and shape domestic association. We argue that "domestic" environmental associations are often the product of global pro-environmental institutions, structures, and activities (see also Schofer and Longhofer 2005). This is particularly relevant for understanding the global South, where individuals have fewer resources to mobilize, the state may afford fewer political

opportunities, and the international community's influence is often relatively stronger.

We draw on the neo-institutional tradition, which characterizes modern nation-states, organizations, and individuals as constituted by the *world society* or *world polity*—that is, by a cultural system of principles and norms enacted through and embodied in transnational organizational structures and institutions (Meyer, Boli, et al. 1997). There has been a tremendous expansion of pro-environmental activity in the world polity, constituting a global "environmental regime." Since the early 1960s, a web of transnational, pro-environmental organizational structures, discourses, and activities has expanded at enormous rates, predominately in the form of international nongovernmental organizations (INGOs), intergovernmental organizations (IGOs), international conferences, and treaties among nation-states (Frank et al. 2000; Meyer, Frank, et al. 1997; Wapner 1996).³

Our conceptualization of an environmental world polity complements work on international political opportunity structures. Early political opportunity structure scholarship was state-centric, focusing on factors such as the openness of political systems, stability of political alignments, and a state's capacity for repression (McAdam 1996; Meyer 2004; Tarrow 1998). Recent extensions of political opportunity arguments point to the influence of international pressures on national political systems (Lewis 2002; Meyer 2003), and even the construction of global opportunity structures (della Porta et al. 2005; Khagram, Riker, and Sikkink 2002; Tsutsui 2006; Tsutsui and Shin 2008). This perspective is broadly compatible with the world society perspective, although it tends to emphasize the bottom-up dynamics of domestic movements that tap into resources and allies in the international system. The world society approach, by contrast, takes more seriously the idea that global dynamics constitute or construct local activity, legitimate social problems, channel resources to domestic organizations, and supply transnational identities to

local actors. In other words, the primary impetus behind domestic environmental associations may be traced to the resources and culture of world society (Frank et al. 2000; Frank, Longhofer, and Schofer 2007; Hironaka 2002). We argue that a pro-environmental world society encourages domestic association in two ways: (1) through direct organizational support and resources and (2) via the cognitive construction of legitimate cultural models regarding protection of the natural environment.

The global environmental regime directly funds and supports domestic environmentalism on a massive scale. For example, OECD and UN agency aid commitments devoted to environmental protection exploded in recent years, growing from only four in 1980 to more than 1,200 in 2000 (Creditor Reporting System Aid Activity database, accessed online June 16, 2006). These aid commitments frequently support community-based environmental groups, such as the Asri Karya pig farmers in Indonesia (supported by AusAID) and many indigenous groups in Colombia as part of the Coama II project to protect the Amazon (funded by the European Commission and the Austrian and Danish governments).

In a survey of environmental organizations in developing countries, Rohrschneider and Dalton (2002) found that over two-thirds of groups surveyed received training or funds from agencies outside their own nation, indicating a high degree of transnational organizational links, knowledge, and resources flowing to domestic organizations. For example, Friends of the Earth and the International Rivers Network provided key resources, expertise, and political pressure to force Japanese investors to withdraw funds from the Sardar Sarovar dam project in central India (Dwivedi 2001; Rodrigues 2004). Similarly, the campaign against the Polonoroeste development project in the Rondônia region of Brazil began as an international movement against multinational development banks (Keck and Sikkink 1998;

Rodrigues 2004). These examples demonstrate how “local” environmental movements are often transnational collaborative efforts or, in the case of Polonoroeste, almost completely the result of global environmental activity.

Case study research on Eastern Europe observes similar dynamics. For instance, the resurgence of the Hungarian environmental movement in the 1990s was due in large part to the increasing penetration of world society. As Lipschutz (1996:145–46) notes, “environmental organizations and foundations in the United States, the United Kingdom, Japan, the Netherlands, France, and Scandinavia, among others, have provided resources of various sorts to groups in Hungary,” and many environmental programs throughout the region were “established and supported by governmental agencies in the West.” The Soros Foundation, Rockefeller Brothers Fund, German Marshall Fund, and USAID all provided resources, organized seminars, and disseminated associational models to Hungarian environmental NGOs, eventually generating a movement with a “heavy American influence: professionally managed, resource mobilizing, and media-orientated” (Kerényi and Szabó 2006:809).

Cultivating domestic organizations has long been part of the global environmental movement. Transnational NGOs engage local communities in wildlife protection efforts, sustainability initiatives, environmental education, and so on. The World Wide Fund for Nature, founded in 1961 primarily as a European fundraising organization for wildlife protection, now maintains national branches in more than 100 countries, working on issues related to wildlife conservation, climate change, sustainable development, and poverty alleviation. WWF, like many international groups, focuses on local empowerment efforts, particularly through sustainability programs and debt-for-nature swaps (Wapner 1996). Engaging local civil society from the top-down can strengthen preexisting associations, but it can also transform civic life more broadly. As Wapner (1996:103) notes,

transnational environmental organizations “reorient the material, social, symbolic, and political dimensions of rural life . . . by providing additional, meaningful frameworks for collective life.”

In addition to the direct transfer of resources and expertise, world society boosts associational activity through construction and diffusion of a highly legitimated global environmental culture (Frank et al. 2000; Wapner 1996). Wapner (1996:42) states that international organizations “contribute to addressing environmental problems by heightening worldwide concern for the environment.” Greenpeace, for instance, explicitly disseminates an ecological sensibility through its extensive media campaigns, educational efforts, scientific research, and strategic efforts to persuade the general public (Wapner 1996). This shared understanding serves as a powerful frame that motivates people to create and participate in associations and provides models of how to pursue environmental protection (Meyer, Frank, et al. 1997; Snow et al. 1986). As environmentalism becomes taken-for-granted in world culture, the probability that an individual will take up pro-environmental ideas and form an association increases dramatically. For example, one of the largest environmental groups in Hong Kong—the Conservancy Association—was founded by “a group of professionals inspired by the ‘environmental consciousness’ of the West” (Chiu, Hung, and Lai 1999:57).

Given the rapid growth and institutionalization of global environmentalism in the world polity, we expect that *countries strongly influenced by the resources and culture of a pro-environmental world society will have more domestic environmental associations*. Moreover, we expect particularly strong effects in the developing world where levels of education and resources are much lower (Gardner 1995; Rohrschneider and Dalton 2002). Boli and Thomas (1999) suggest that developing countries join international associations at high rates and are especially likely to be

influenced by them. We thus expect that *pro-environmental world society will have a greater impact in the developing world than in the industrialized West*.

METHODS

We present event history and dynamic panel models examining the effects of domestic and international variables on environmental associations from 1960 to 1995. Our event history models focus on the rate of organizational foundings (Tuma and Hannan 1984; Yamaguchi 1991).⁴ The unit of analysis is the country, which may experience repeated organizational founding events over time.⁵ We use an exponential model with time-varying covariates, consistent with similar studies (Frank et al. 2000; Schofer 2003).⁶ Cross-sectional models may be biased due to reverse-causal effects between key variables such as domestic environmental associations (the dependent variable) and citizen memberships in international environmental groups (a key variable of interest). Event history models focus on rates rather than levels of the dependent variable, and they allow us to exploit the temporal ordering of independent variables and dependent outcomes in a manner that avoids some of the weaknesses of cross-sectional models (see Blossfeld, Golsch, and Rohwer 2007). We conducted corollary analyses, including frailty models that include a term for case-specific error, to address concerns about unobserved heterogeneity; results (not presented here) were similar.

To further address potential sources of endogeneity, we estimated dynamic panel models that are robust to violations of strict exogeneity assumptions. For instance, Paxton (2002) shows that democracy encourages the formation of associations, but associations have a reciprocal effect on democracy. This could lead us to overestimate the impact of democracy on associations. Recent innovations in models for dynamic panel data allow

us to address case-specific heterogeneity as well as violations of strict exogeneity using the Arellano-Bover/Blundell-Bond system GMM estimator (Arellano and Bond 1991; Arellano and Bover 1995; Baltagi 2008; Blundell and Bond 1998; Wooldridge 2001). The system GMM models combine first-differencing with an instrumental variables approach using a Generalized Method of Moments (GMM) estimator. Contemporary values of covariates may be endogenous, so lagged levels and differences of those measures (which are historically prior and thus presumably exogenous) are used as instrumental variables to estimate effects (see Wooldridge 2001).

DATA

We collected data on domestic environmental associations from the *World Directory of Environmental Organizations* (the *Directory*) and the *Encyclopedia of Associations: International Organizations* (the *Encyclopedia*). We draw on two independent sources to reduce idiosyncratic source-level biases in our dataset. The *Directory*, first released by the Sierra Club in 1973 and published regularly thereafter, provides basic information on governmental and nongovernmental environmental organizations across the world, including name, address, contact information, and founding date (California Institute of Public Affairs 2005; Tryzna 1973, 1989, 2001; Tryzna and Childers 1992; Tryzna and Coan 1976; Tryzna, Margold, and Osborn 1996). Organizations listed in the *Directory* include citizens' environmental groups, environmentally oriented development organizations, and academic research centers involved in either environmental policy work or information dissemination. The *Encyclopedia* includes a broad range of nongovernmental organizations from around the world (Gale Research Group 2001). Organizations are categorized by keywords, allowing us to identify those devoted to environmental issues.

The *Directory* and the *Encyclopedia* provide environmental associations' founding dates, which we used to construct longitudinal densities and founding data.⁷ In addition, we coded prior editions of our sources to avoid survivor bias, that is, organizations that failed prior to the contemporary period are omitted from the data.⁸

Similar to previous studies (e.g., McLaughlin and Khawaja 2000), we collected data on all domestic associations, except for the following exclusions: (1) governmental organizations; (2) local chapters of major international nongovernmental organizations, such as the World Wild Fund for Nature (WWF) and Greenpeace, which avoids potential tautology when we use measures of international association to predict domestic associations; and (3) academic research institutes.

The *Directory* and the *Encyclopedia* are the most comprehensive cross-national data sources available. Nevertheless, all organizational directories are subject to systematic biases that would likely affect our study. While no one (to our knowledge) has examined our international sources against an independent data collection effort, Brulle and colleagues' (2007) comprehensive study of U.S. environmental groups provides the clearest picture of the challenges of collecting data from organizational directories. They observe that any given source has idiosyncratic biases, and therefore, the use of multiple sources is recommended. To this end, we code the two best available sources that provide longitudinal data on environmental organizations. The number of organizations listed in our two sources for each country correlate at above .90 and at similar strength with other sources, such as the *World Guide to Scientific Associations and Learned Societies*, which includes cross-sectional information on ecology organizations (Zils 1998). The high correlation at the country level between these completely independent sources is reassuring, whereas low correlations might suggest idiosyncratic country-specific biases.

Organizational directories are also prone to undercounting particular types of organizations. Brulle and colleagues (2007) find that the *Encyclopedia of Associations* is best at collecting information on voluntary associations (which is our goal), but it underestimates the presence of smaller, short-lived, and less mainstream organizations. Andrews and Edwards (2004) and Minkoff (2002) also find that national organizational directories undercount organizations not located near Washington, DC. Although we coded multiple versions of our data sources (including every version of the *Directory*) to identify organizations that drop out over time, our dataset likely undercounts smaller and more peripheral organizations.⁹ Some biases articulated by Brulle and colleagues and others are less likely to affect the aggregate data of the sort employed here. For instance, the omission of short-lived organizations will not have much impact on the country-level densities analyzed in our dynamic panel models. In summary, our sources are likely to be biased in favor of large, mainstream environmental groups and against groups with more radical agendas (e.g., environmental justice groups and deep ecology movements) or that fall outside the mainstream (e.g., indigenous groups built around non-Western conceptions of environmentalism).

We developed our theoretical arguments with this potential bias in mind: we focus on the formation of larger, mainstream organizations that are a potent source of political change and clearly of interest to scholars. Our sources do not provide a census of all environmental associations across the globe, but that is not our intent. Rather, we are interested in the *relative presence* and *longitudinal variability* of associations across societies. Our task is aided by the fact that cross-national differences in civic life (not to mention many other phenomena) tend to be quite large. Variables like GDP per capita vary by factors of up to 100 to 1, and our association measures show similar variability. In other words, there is a strong signal in these data that may be detectable despite various

sources of noise. Nevertheless, taking these potential biases into account, we should not assume that our findings apply to marginalized or radical branches of the environmental movement.

Dependent Variable

Domestic environmental associations. Event history models analyze environmental association founding events over time. Dynamic panel analyses model annual country-level densities of environmental associations.¹⁰

Independent Variables

Environmental degradation. We examined many environmental degradation measures, including organic water pollution emissions per capita, electricity consumption per capita, CO₂ emissions per capita, deforestation (percent change in land area in prior decade), and paper and paperboard consumption per capita (World Resources Institute online data portal [<http://www.earthtrends.wri.org>], accessed July 25, 2005).¹¹ Our main tables present results based on paper and paperboard consumption, which has the virtue of being highly correlated with other forms of degradation while also being available for a large sample and a long span of time. Our main analyses are replicated in Table 4 using alternative measures of degradation, to assess the robustness of our findings.

Economic development. We measure development by taking the natural log of real Gross Domestic Product (GDP) per capita (Center for International Comparisons 2002). Alternative measures of development or industrialization, such as energy consumption or the Human Development Index, yield similar results.

Population. We include a control for national population (logged), because large societies typically have greater numbers of voluntary associations (World Bank 2001).

Education. We measure education using the tertiary enrollment ratio, taken from the World Development Indicators dataset (World Bank 2003). We also examined the effects of secondary enrollment, which had no effect on environmental associations.

Democracy. We use an index of two seven-point scales of civil liberties and political freedoms (Freedom House 2004).¹² Since 1972, Freedom House has published annual surveys of the degree to which individuals experience political freedoms (such as free elections) and civil liberties (such as freedom of expression and association) in more than 190 countries. We reversed the coding of the two scales so that higher values represent more freedoms and liberties.

Environmental legislation. We include a dummy variable coded 1 for years following passage of the first comprehensive environmental law in each country (many of which are comparable to the EPA in the United States). Examples include the Afghanistan Environment Act (2005), the Ghana Environmental Protection Agency Act (1994), and the Norway Conservation Act (1970). Data come from the ECOLEX Web site (<http://www.ecolex.org>), which contains the full text of environmental legislation for all countries; it is maintained by the IUCN, UNEP, and Food and Agriculture Organization of the UN. Alternative legislation measures, such as environmental impact assessment laws, yield similar results.

Environmental foundations. We include a longitudinal measure of private foundations operating in each country with an explicit environmental focus. Data come from the *World Guide to Foundations* (Zils 2004). We use the natural log to reduce skewness.

Influence of the world polity. We measure influence of the world polity on a given

country by citizen ties to international environmental associations (environmental INGOs). Environmental INGO memberships summarize the extent to which a country is embedded in the global environmental regime and thus is likely to be influenced by global pro-environmental cultural models and norms (Frank et al. 2000; Hironaka 2002). Data from the Union of International Associations (1948 to 1999) measure the number of environmental INGOs in which citizens from a given country hold membership. We take the natural log to reduce skewness.

Trade openness. Some scholars argue that trade, particularly in developing countries, may have a negative impact on environmental protection (Yearley 1994). We measure trade openness by the total sum of imports and exports as a proportion of GDP (Center for International Comparisons 2002).

Table A1 in the Appendix includes descriptive statistics for variables used in the main analyses. Our maximum full sample size for countries is 104, but it is typically lower due to missing data on particular independent variables.

Corollary Analyses and Additional Methodological Issues

We examined a range of model specifications to address potential omitted variable bias and to ensure the robustness of our findings. Results were remarkably consistent. Among other things, we included controls for population growth, prior organizational foundings and foundings squared, alternate measures of democracy, foreign direct investment, world system position, oil exporting countries (dummy), and geographical region. We also examined various attitudinal measures (e.g., pro-environmental views, trust, post-materialist views, and egalitarianism) using country means of individual-level survey data from the World Values Survey. We tested for interactions

Table 1. Average Founding/Joining Dates for Domestic and International Environmental Associations/Memberships by Region as of 1990

	Environmental INGO Memberships (Joined)	Domestic Environmental Associations (Founded)
Industrialized West	1964	1958
Eastern Europe	1966	1970
Asia	1976	1980
South and Central America	1976	1983
Middle East	1978	1978
Africa	1979	1979

Note: Regions where domestic association substantially precedes international are in bold.

and nonlinear effects of key variables such as economic development. Finally, we checked for outliers. The United Kingdom and Singapore appear to be extreme outliers and therefore we excluded them from our analyses. Findings were generally unaffected, although the effect of education is substantially smaller in analyses of industrialized countries when the United Kingdom is included.

RESULTS

We first summarize patterns of environmental association formation across geographical regions. Table 1 presents the average founding date of domestic environmental associations and the average timing of first citizen membership in international environmental associations for major geographical regions. In the industrialized West, the average founding date of domestic associations precedes the average onset of citizen membership in international organizations by nearly six years. This is consistent with historical accounts that describe a long history of domestic association prior to the rise of the global environmental regime.

The timing is notably different in other regions, with domestic association following or emerging more or less in tandem with international memberships. In Central and South America, for example, international memberships arrive, on average, seven years before

domestic associations. In Africa and the Middle East, the emergence of domestic association, on average, coincides with citizen participation in international environmental groups.

These patterns are even clearer in Figures 2 and 3, which trace the growth of memberships in environmental INGOs and the founding of domestic associations in developed and developing countries. Among industrialized countries, domestic organizations clearly precede memberships in international organizations, beginning in the late 1800s and accelerating in the 1960s and 1970s. Participation in international organizations also begins much earlier in industrialized countries than in the developing world, although the slope is much steeper in the more recent period in developing countries. In non-industrialized countries, environmental INGO memberships precede the founding of domestic organizations, rising in the late 1960s and early 1970s. Domestic organizations, on the other hand, expand slowly until the mid-1970s, years after the penetration of the international environmental community.

Table 2 presents event history models of the founding of environmental associations. Model 1 displays results for all countries, Model 2 looks at the highly industrialized world, and Model 3 focuses on the rest of the world. It is immediately clear that the global models mask significant heterogeneity between highly industrialized and less industrialized countries.

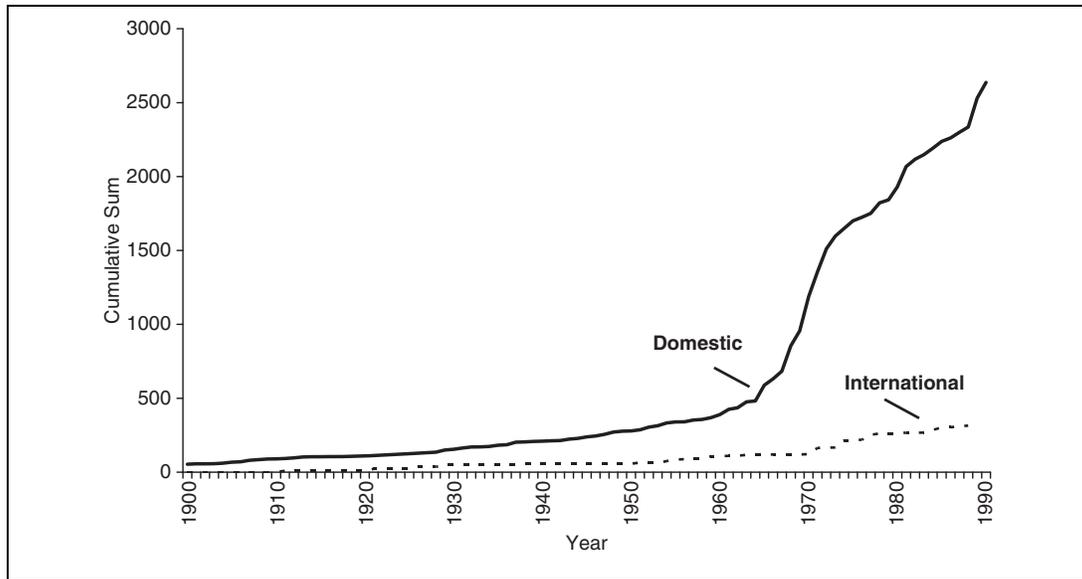


Figure 2. Growth of Domestic Environmental Organizations and International NGO Memberships in Industrialized Countries: 1900 to 1990

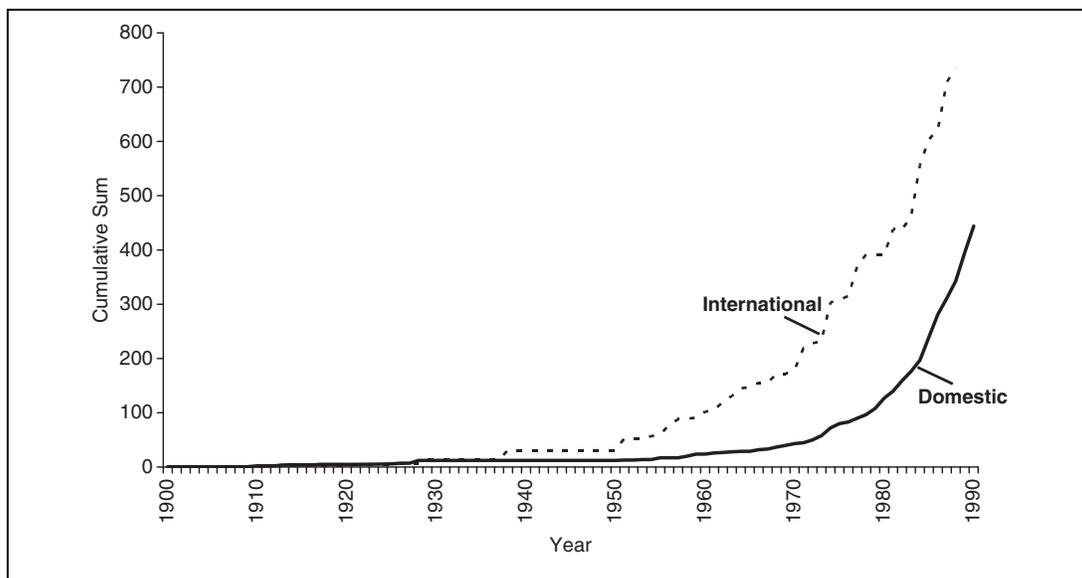


Figure 3. Growth of Domestic Environmental Organizations and International NGO Memberships in Non-industrialized Countries: 1900 to 1990

All Countries

Model 1, based on our full sample, shows that populous, highly educated, and democratic societies have higher levels of domestic environmental association. Every point increase in higher education enrollment

ratios yields a 3 percent increase in the rate at which environment associations are founded ($\exp(.026) = 1.03$).¹³ Each point increase in democracy increases the rate of association formation by 31 percent ($\exp(.271) = 1.31$), a large effect. In the aggregated model, domestic legislation and

Table 2. Event History Analysis of Environmental Association Foundings, 1960 to 1995

Variables	Model 1: All Countries	Model 2: Industrialized Countries	Model 3: Non-industrialized Countries
Control			
Population	.321** (.101)	.735*** (.160)	-.010 (.086)
Environmental degradation	.280 (.196)	-.143 (.131)	.120 (.146)
Domestic-Societal Factors			
Economic development	-.501* (.241)	1.085 (.702)	-.564** (.189)
Education	.026** (.007)	.014 (.008)	.012 (.012)
Domestic-State Factors			
Democracy	.271*** (.093)	1.517* (.651)	.225** (.066)
Environmental legislation	.298 (.277)	.511* (.258)	-.318 (.261)
Environmental foundations	-.050 (.089)	.362** (.116)	.372** (.135)
International Factors			
Trade openness	-.011* (.004)	-.021** (.007)	-.005 (.003)
World society ties (environmental INGOs)	-.148 (.258)	-2.185*** (.493)	.655*** (.163)
Constant	-1.139 (1.846)	-16.740*** (3.646)	1.365 (1.669)
Wald chi-square	558.94***	1069.11***	148.85***
Number of events	596	295	301
Number of countries	92	17	75
Observations	3,052	767	2,285

Note: Unstandardized coefficients, standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

domestic environmental foundations, measures of political opportunities and resources, respectively, have no effect. Finally, we find a small negative effect of trade on environmentalism, suggesting that highly open economies have fewer environmental groups.

We also see some surprises. Environmental degradation, often thought to prompt pro-environmental organizing, has a positive but insignificant impact on formation of environmental groups (we explore this issue further below). In addition, Model 1 finds that wealthier countries have fewer environmental associations, net of other factors, than do poor countries. We also find no effect of world society on environmental association. The

picture changes markedly, however, when we disaggregate our analyses.

Industrialized Western Countries

Model 2 shows results for highly industrialized countries. Again, population and democracy have positive and significant effects, although the coefficient for education is nearly significant in this smaller sample. As before, we see a small negative impact of trade and no significant effect of environmental degradation. GDP per capita has a positive but nonsignificant effect. Among affluent societies, the wealthiest do not

have significantly more environmental associations than do the others.

In Model 2, we see a large positive effect of domestic environmental legislation on the formation of environmental associations. Among highly industrialized nations, enactment of major national legislation spurs the founding of new associations, consistent with opportunity structure arguments. We also observe a positive and significant effect of philanthropic foundations, a domestic resource measure.

Finally, Model 2 shows a negative and significant effect of world society, measured as national memberships in environmental INGOs, on the formation of domestic environmental associations. Looking at Figure 2, the reason is quite apparent. Among highly industrialized nations, the explosion of domestic associations precedes the emergence of a world environmental regime. National links to environmental INGOs in world society develop only after the explosion of domestic associations tapers off. The negative relationship may be temporally coincidental rather than causal. One could imagine, however, a possible substantive effect: transnational environmental associations may begin to supplant or replace domestic associations, reducing their rate of formation (see Meyer, Frank, et al. [1997] for an analogous case of environmental intergovernmental organizations crowding out INGOs). In Europe, for instance, the recent boom in transnational environmental organizing might preempt the formation of subsequent national-level groups.

Non-Western Countries

Model 3 examines countries outside the industrialized West. The most striking difference is a 180-degree shift in the impact of world society. Among less wealthy countries, our world polity variable has a very strong positive effect on the formation of domestic associations. Each point increase in a country's ties to international environmental associations is associated with a 92 percent increase in the rate at which domestic associations are founded ($\exp(.655) = 1.92$).

This large effect suggests that transnational forces powerfully drive the expansion of environmental associations in the developing world.

Environmental foundations also have a large effect in this sample of countries. Every additional point in our foundations measure is associated with a 45 percent increase in the rate at which domestic environmental groups are formed ($\exp(.372) = 1.45$). While this is ostensibly a measure of domestic resources, this finding may also partly reflect world society dynamics. Many national foundations, such as those tied to George Soros's Open Society Institute, participate in various transnational networks and are often key conduits through which global ideas and resources implant in local societies (Roelofs 2003; Stone 2008).

We also observe a substantial effect of democracy on domestic environmental association formation. Each point increase on the democracy scale results in a 25 percent increase in the rate at which environmental associations are founded ($\exp(.225) = 1.25$). As one would expect, associational life is constrained by nondemocratic regimes. Other domestic effects are muted. Environmental legislation, which generates powerful opportunities among wealthy nations, has no effect in this sample of less industrialized countries. The effect of population is diminished and loses significance (although it creeps back in Table 3). Likewise, the effect of domestic education falls shy of significance in Model 3.

We find that national wealth, measured by GDP per capita, has a negative effect on environmental association in our sample of non-industrialized countries. Given the prevalence of environmentalism in highly industrialized countries and a positive (although insignificant) effect of GDP in that subsample, we expected the opposite (we speculate on some possible reasons below). National participation in global capitalism, as measured by trade openness, has a negative effect on environmental associations that falls shy of statistical significance. Foreign direct investment has

Table 3. System GMM Dynamic Panel Estimates of Environmental Associations, 1960 to 1995

Variables	Model 4: All Countries	Model 5: Industrialized Countries	Model 6: Non-industrialized Countries
Control			
Lagged dependent	.938*** (.009)	.958*** (.010)	.929*** (.009)
Population	.030** (.009)	.025* (.010)	.023* (.010)
Environmental degradation	-.015 (.016)	-.011 (.010)	-.006 (.011)
Domestic-Societal Factors			
Economic development	.012 (.004)	.079** (.028)	.002 (.001)
Education	.0003* (.001)	-.0003 (.0004)	.002 (.001)
Domestic-State Factors			
Democracy	.015*** (.004)	.020** (.007)	.013*** (.004)
Environmental legislation	-.001 (.013)	-.014 (.012)	.005 (.014)
Environmental foundations	.010 (.011)	-.007 (.008)	.044** (.013)
International Factors			
Trade openness	-.0002 (.0002)	-.001 (.0004)	-.0002 (.0002)
World society ties (environmental INGOs)	.034*** (.009)	-.014 (.019)	.028** (.009)
Constant	-.297* (.149)	-.792** (.263)	-.271 (.172)
Wald chi-square	38073.44***	39268.65***	32313.68***
Number of countries	104	20	84
Observations	3,102	655	2,447

Note: Unstandardized coefficients, standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

a similar nonsignificant effect (results not presented here). Negative effects might suggest that certain structural positions within the global capitalist system—namely, countries that are high-traders within the less industrialized world—experience pressures that undercut domestic environmental association, consistent with world-system arguments (Jorgenson and Burns 2007; Jorgenson and Kick 2006; Wallerstein 1974). The consistency of the negative coefficients is suggestive, but our sample does not provide evidence needed to draw firm conclusions.

Table 3 presents results of dynamic panel models using the system GMM estimator. The estimator is robust to potential sources of endogeneity (see above), although it is relatively inefficient and not suited for small samples (particularly when $N < T$, the number of waves in the panel; see Wooldridge [2001]). Analyses of the industrialized world, with an N of 20, are presented only for illustrative purposes and should be taken with a large grain of salt.

We focus on two variables, democracy and influence of the world polity, where concerns

of endogeneity are greatest. Paxton (2002) shows that democracy has a reciprocal relationship with associations. Environmental INGO membership may have a reciprocal relationship with environmental associations to the extent that domestic associations provide experiences or network connections that lead individuals to join international organizations. Importantly, both variables have consistent effects in the GMM analyses for the full sample and the non-industrialized countries, giving us greater confidence in these findings.

Several other coefficients weaken and lose significance in analyses of the industrialized countries (Model 5), but we should not draw conclusions based on small samples when using the GMM estimator. Generally speaking, system GMM results for the developing world (Model 6) are consistent with the event history models with the exception of population, which is positive and statistically significant in the GMM analyses.

Degradation: A Closer Look

Table 4 examines several additional measures of country-level environmental degradation. Environmental destruction takes many forms; consequently, any single measure may be insufficient to evaluate the argument that degradation prompts formation of associations. Results in Table 4 again find little evidence that environmental associations proliferate faster in highly degraded countries. We observe only one significant effect, running in the opposite direction expected: countries experiencing rapid deforestation have lower rates of environmental association formation. It is possible that the social and political conditions generating deforestation are linked to repression of voluntary associations. For example, Ehrhardt-Martinez, Crenshaw, and Jenkins (2002) find that weak democracies experience rapid rates of deforestation relative to strong democracies. Alternatively, the finding may be an artifact of measurement, as some small developed countries with high levels of association

(e.g., the Netherlands) experienced sizeable forest *growth* in the period, thus generating some moderate outliers that may account for much of the effect. We should also note that consciousness or awareness of environmental degradation (which we do not directly measure here) may play a role in spurring environmental mobilization. Direct exposure to degradation may lead to environmental mobilization, even if more general environmental problems (e.g., pollution) do not (Brechtin and Kempton 1994; Dunlap and Mertig 1995; Dunlap and York 2008). However, we lack appropriate data to test for this effect.¹⁴

Environmental Attitudes

We used aggregated survey data from the World Values Survey and Dunlap, Gallup, and Gallup (1993) to model the effect of 10 attitudinal measures on environmental association in a cross-section of countries. Results are exploratory in nature due to small sample sizes (attitudinal data are quite limited, especially in earlier time periods) and therefore are not presented here (available from the authors upon request). We found no effect of post-materialism on the rate of formation of environmental associations, contrary to predictions of the Inglehart tradition. Likewise, most environmental attitude variables have no effect on the rate of association formation. We found small effects, again only in the West, of two measures: feelings on whether environmental issues are the most important problems facing a nation, and whether environmental protection should be given a higher priority than economic growth. We found no effects outside the industrialized West. We are cautious, however, in drawing strong conclusions given the small sample size.

Regional Differences

The sharp differences between industrialized Western nations and everyone else prompted

Table 4. (continued)

	All Countries				Non-industrialized Countries			
	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
CO ₂ emissions, logged			.284 (.247)				-.195 (.183)	
Deforestation (percent change in area, 1990 to 2000)				-.021** (.008)				-.013* (.006)
Constant	-3.378 (2.042)	-.868 (1.795)	.115 (2.572)	-4.683* (1.950)	-.843 (1.922)	1.612 (1.885)	-2.738 (2.527)	-.809 (1.467)
Wald chi-square	692.58***	568.31***	495.04***	575.21***	94.25***	83.57***	168.28***	161.04***
Number of countries	89	74	94	92	72	57	77	76
Number of events	514	512	598	595	268	262	303	302
Years	1970-95	1970-95	1960-95	1960-95	1970-95	1970-95	1960-95	1960-95
Observations	2,227	2,031	3,105	3,073	1,640	1,427	2,338	2,342

Note: Unstandardized coefficients, standard errors in parentheses.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

us to disaggregate further, looking for interesting differences based on geographical region, colonial history, timing of independence, and the like. We found few robust, consistent differences. Effects fluctuated somewhat in magnitude in subanalyses, as sample sizes dwindled for small regions. Overall, the same basic picture emerges: world society, democracy, and (to a lesser extent) foundations dominate the models among non-Western regions.

DISCUSSION

Statistical analyses of the industrialized West support a domestic social movement story. Resources provided by philanthropic foundations are associated with higher rates of environmental association formation. Domestic political opportunities, in the form of democratic institutions and favorable legislation, accelerate the formation of pro-environmental groups. International factors do not promote domestic association.

Among non-industrialized countries, international influences strongly encourage domestic pro-environmental organizing, which is consistent with a world society/transnational social movement story. Countries strongly tied to international pro-environmental associations have the highest rates of domestic environmental association formation. This finding holds when our data and analyses are specifically tailored to address potential endogeneity, as countries with large numbers of domestic associations may also have stronger ties to international groups (see Table 3).

If anything, our models understate world society's effect on domestic association because we exclude the many local chapters of international groups from our dependent variable. Branch organizations or chapters of international organizations are common throughout the developing world; they represent an important avenue through which global forces shape local civil society. We excluded them for methodological reasons

(to avoid a tautological link between measures of international organizations and our dependent variable), but they are substantively important. Local chapters often have access to international resources and expertise. While we lack systematic data, anecdotal evidence suggests they are often significant players in local environmental politics in the developing world.

To what extent do global influences encourage the founding of new civil society organizations, versus leading preexisting domestic associations to take up environmental causes? An examination of organization names, descriptions, and founding dates finds few examples of the latter, suggesting that domestic civil society indeed expands in response to global forces.

We also see a large effect of domestic foundations among less industrialized countries. While this is nominally a domestic resource variable, historical accounts suggest that Western foundations played a key role in establishing philanthropic traditions in many developing countries in an effort to curb communism and support education and health-related institutions (Roelofs 2003). Anecdotal evidence suggests the same: emergent global philanthropic networks, such as the Worldwide Initiatives for Grantmaker Support (WINGS), help channel millions of dollars for cultivating local philanthropic ventures. Again, international dynamics are likely important.

Finally, we observe a big effect of democracy on environmental associations, consistent with prior studies and basic opportunity structure imagery. Political repression hampers associational life generally, and environmental associations specifically. It is equally interesting to reflect on the factors that are not associated with the formation of environmental associations: environmental degradation, affluence, and global economic integration.

Environmental degradation. Although previous scholars do not attribute the modern environmental movement solely to ecological

crises, grievances stemming from environmental ills do play a big part in explaining environmental mobilization (Brulle 2000; Faber 2005; Gardner 1995; Martinez-Alier 2002; Pellow 2007). Yet, we do not find a positive association between country-level degradation and formation of new environmental associations. Our results are consistent with Tilly's (1986, 2003) classic observation that grievances alone are insufficient to mobilize people, and with the literature on environmental attitudes that fails to find a strong influence of degradation (e.g., Franzen and Meyer 2010).¹⁵

Affluence. Ecological modernization theory argues for a strong link between advanced capitalism and environmentalism. Inglehart's work on post-materialism has been taken up by scholars of the environment, resulting in the popular notion that people must have basic needs met before they start to care about luxuries such as environmental protection (Kidd and Lee 1997). We find little evidence for this. Only the system GMM analysis of affluent countries produces a significant, positive result. Our results are consistent with much prior work on environmental attitudes in the developing world (Brechin and Kempton 1997; Dunlap and Mertig 1997; Dunlap and York 2008). Now that environmentalism is institutionalized in a global regime, pro-environmental discourses and organizational forms spread globally, even to less affluent countries.

Our skepticism is bolstered by the observed negative effect of economic development in less industrialized countries. One possible explanation is that environmentalism is repressed or overlooked by newly-industrializing countries bent on maximizing growth, which often comes at a cost to the natural environment. For example, recent economic growth in China was accompanied by weak environmental protection efforts despite rising levels of pollution and degradation (Economy 2005). Another possibility is that the absence of a thriving economy may

actually foster association formation.¹⁶ Dill and Longhofer (2006) observe this phenomenon in urban Tanzania: NGOs are a route to resources (e.g., grants from international donors or state agencies) and status in a society with few economic opportunities. We do not find a negative effect of GDP in the system GMM analysis, however, so it is premature to draw firm conclusions.

Global economic integration. World-system imageries are prominent in global analyses of environmentalism. Indeed, core variables like foreign direct investment (FDI) affect many forms of degradation. Yet, world-system indicators have proved less useful in accounting for the spread of pro-environmental policies (Frank et al. 2000). We find that measures of international economic integration are not significantly associated with domestic environmental associations. Our findings do not support strong versions of world-system imagery, which suggest that political interests or people's environmental consciousness are subordinated to economic relations. Economic integration may directly contribute to degradation; we do not see evidence that it shapes political dynamics more broadly.

Finally, we reflect on the limitations of our data sources. How might our findings differ were we able to measure the entire population of environmental associations, rather than the larger, resource-rich, longer lived, and more mainstream associations that are best captured in organizational directories? At the most general level, we would expect broadly similar results for several reasons. First, case studies and national surveys both suggest that diverse types of environmental associations co-vary across countries. In countries where large, mainstream environmental groups flourish, so do smaller and more radical ones (Rootes 2003). Second, related to this, most arguments regarding the origins of association are fairly general and would likely apply to mainstream and non-mainstream groups. The literature does not suggest that general factors—such

as education or resources—would encourage mainstream groups but not radical ones (or vice versa) or large but not small associations (or vice versa).

Yet, we offer some speculations. First, democracy may have a larger (positive) effect on radical and especially contentious environmental groups. Opportunity structures found in nondemocratic regimes (e.g., China) are particularly unfavorable for contentious groups. Our estimate of the democracy effect might thus be larger, were radical environmental associations better represented in our data sources. Second, some work suggests that philanthropic foundations tend to favor tame, rather than radical, environmental groups (Brulle and Jenkins 2005). Consequently, analyses of our data sources may lean toward overestimating the effect of philanthropic foundations. The impact of the world polity is an open question. Clearly, mainstream environmental views are dominant in the world polity, much as they are in national political arenas. Yet, one can certainly find INGOs and discourses in the international sphere that support and actively proselytize nontraditional or even radical environmentalist themes (e.g., deep ecology and ecofeminism) on a global scale. The implications for our study are unclear. Finally, environmental degradation may have a disproportionate effect on radical environmental groups—perhaps because extreme environmental destruction prompts strong responses—and thus estimated effects might be larger based on data sources that better capture radical groups.¹⁷

CONCLUSIONS

Our new cross-national dataset allows us to test a wider range of arguments and examine a more diverse set of countries than could prior research on domestic environmentalism (and voluntary associations, more generally). Our results validate prior social movement accounts of environmentalism in the West,

which stress resource mobilization and political opportunities. Arguments emphasizing environmental destruction or affluence are not supported. We also find that global processes powerfully shape domestic civic life, consistent with work on international political opportunities and neo-institutional world polity or world society theory. The emergence of a global environmental regime and pro-environmental associations in global civil society support the formation of environmental associations around the globe. Environmental associations now appear even in countries lacking domestic infrastructures, which were so pivotal to the environmental movement in the West.

While there has been increasing recognition of an expanding transnational world society, there is still a strong tendency to characterize domestic environmental associations as local organizations responding to local contexts or reaching out to international allies (e.g., Keck and Sikkink's [1998] "boomerang" argument). Our study highlights a contrasting imagery: international organizations and global culture reach down into domestic civil society, providing organizational models, resources, and legitimation that spurs formation of associations that may be quite global in character. Indeed, historical accounts of organizational foundings in the developing world often include a laundry list of international supporters, affiliates, and donors. For example, the Sri Lankan Centre for Environmental Justice (founded in 2004) was supported from the outset by large, well-funded environmental NGOs in the United States, Australia, the Netherlands, Philippines, and South Korea (Frank et al. 2007). This raises questions about the extent to which domestic associations can be viewed as local social capital, as is common in the literature on voluntary association.

Do the strong international influences in non-Western nations have any implications for the effectiveness of domestic associations and movements in precipitating social change or policy reform? There is a long

tradition of viewing international groups as an ally of domestic movements (e.g., Keck and Sikkink 1998). Yet, domestic and transnational groups may be more complexly intertwined than that (Tsutsui and Shin 2008). Some quantitative research finds that domestic environmental groups have little effect on environmental policy reform once the influence of the global environmental regime is controlled, suggesting that domestic associations are epiphenomenal to the process of social change (Frank et al. 2007). Yet, in recent years, international treaties and institutions increasingly pressure states to consult “domestic” stakeholders (Schofer and Longhofer 2005). This growing centrality of domestic associations may be seen as greater democratic

participation, but it could also be interpreted as the top-down structuration of a circular or self-referential system that squeezes the state from above and below. Certainly, concerns that domestic associations may be substantially co-opted by the agendas of transnational or Western environmentalists are not unfounded. Whether this makes them more or less effective at generating policy change over time is a question that can be answered only by further research. Nevertheless, our study raises fundamental questions about the putatively domestic nature of voluntary associations in the developing world, which thus brings into question the conventional depictions of the impact of voluntary associations on politics.

APPENDIX

Table A1. Descriptive Statistics for Independent Variables

	1995		
	N	Mean	SD
Environmental associations (log)	104	1.506	1.003
Population (log)	104	9.311	1.618
Degradation (resource consumption) (log)	104	2.469	1.845
GDP per capita (log)	104	8.327	1.142
Education (tertiary)	104	18.780	20.064
Democracy	104	.364	1.804
Environmental legislation	104	.510	.502
Environmental foundations (log)	104	.634	1.019
Trade openness	104	72.286	39.305
Environmental INGOs (log)	104	2.227	.528

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Notes

1. It is important not to conflate membership and association. The two are not highly correlated at the

- country level: some societies (e.g., corporatist countries) exhibit very high levels of membership concentrated in relatively few associations, while some societies show the opposite pattern. Associations and membership may both have independent impacts on outcomes of interest (e.g., social movement activity or policy reform) and both are clearly worthy of study. We follow the lead of previous scholars who have studied the history of environmental organizations in the United States (Andrews and Edwards 2005; Brulle 2000).
2. We thank an anonymous reviewer for pointing us to these studies.
 3. Although global environmental concerns can be traced back as early as the 1890s, with the formation of the International Union of Forestry Research Organizations (1891) and International Friends of Nature (1895), the growth in international activity accelerated rapidly after the founding of the United Nations Environment Programme (1972) and related environmental conferences in Stockholm (1972) and Rio de Janeiro (1992) (Frank et al. 1999; Keck and Sikkink 1998).
 4. The start and end times of the analysis are largely constrained by data availability. For instance, data on environmental association memberships (taken from Frank et al. 2000) are not available in the late 1990s. Also, several variables have spotty coverage in the developing world prior to 1960. Fortunately, the 1960 to 1995 period effectively captures the origins and take-off of environmental associations globally.
 5. All countries enter the analysis in 1960 or the year of independence; we omit the few organizations founded prior to 1960 or the pre-independence era of former colonies.
 6. An exponential (or constant rate) model assumes that temporal changes in the hazard rate are wholly a function of time-varying covariates rather than some intrinsic function of time (as in the case of, say, a Weibull model) or an arbitrary baseline hazard (in the case of Cox regression).
 7. We lack data on organizational failure. This has no consequence for analyses of organizational foundations, but it means densities (which do not exclude failed organizations) may be overestimated. Our dataset consists mainly of large well-established organizations, which tend to have low rates of failure, so overestimation is likely to be small. Moreover, we use statistical models that focus on change to minimize the issue. While organizational failures in prior years or decades may lead to persistently overestimated densities, they do not have any persistent effect on year-to-year change.
 8. We coded all six prior print volumes of the *Directory* as well as the online version (accessed May 18, 2005). These volumes effectively cover the period of rapid growth of environmentalism around the world. We also examined older editions of the *Encyclopedia*; prior editions were very sparse and do not substantially add to our dataset.
 9. Like Boli and Thomas (1999), we find there is a substantial lag—as much as a decade—between the time organizations are founded and when they finally appear in our sources. The decrease in the hazard rate of new association formation in the late 1990s is likely an artifact, rather than a real decline. This is a second reason why we terminate our quantitative analysis in 1995.
 10. This could be analyzed as a count variable (and we explored such models), but the shape of the distribution and infrequency of zeros allows us to confidently use a linear model.
 11. Environmental footprint measures are less appropriate for our purposes because they capture overall environmental impact, not local degradation experienced by citizens of a country. In any case, we find no effect of environmental footprint in our sample (results not presented here, available from the authors upon request).
 12. The reliability scale coefficient for the democracy index is .95.
 13. Secondary education also has a positive effect, but it tends not to be significant.
 14. We also checked for regional degradation to see if nearby ecological problems generate association in a neighboring country. The results are the same.
 15. Of course, this only looks at broad metrics of country-level degradation. We cannot rule out the possibility that people organize in response to very localized forms of degradation or highly specific ones (e.g., big disasters). Environmental damage is typically distributed quite unequally within societies. Some citizens may experience many environmental injustices even if the mean societal levels of degradation are low (Clapp 2001; Pellow 2007). However, localized mobilizations may also take on the form of short-term campaigns and not leave behind many environmental organizations like the ones studied here.
 16. We thank John Meyer for this idea. He observed rapid proliferation of NGOs in Soviet Georgia following economic collapse in the 1990s, as unemployed professionals sought to tap into development aid from the state and international donors.
 17. We thank an anonymous reviewer for this suggestion.

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