Organizational Ecology and Organizational Diversity in Global Governance

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ABSTRACT

Institutional diversity is the hallmark of contemporary global governance. Global governors have multiplied dramatically: in most areas, they include not only formal intergovernmental organizations and treaty bodies, but also informal intergovernmental institutions, transgovernmental networks, public-private partnerships and private transnational regulatory organizations. Organizational ecology provides an insightful framework for analyzing the evolution of such organizational forms. Organizational ecology seeks to explain how social and political conditions affect the abundance and diversity of populations of organizations; it emphasizes the appearance and evolution of organizational forms in response to changing conditions, and the intrinsic and environmental factors that influence whether particular forms thrive or decline. It is a valuable complement to traditional theories of politics, which focus on individual organizations and emphasize agency, strategic choice and power. To demonstrate the utility of combining these approaches, we analyze the recent emergence and proliferation of private transnational regulatory organizations (PTROs), in comparison to the relative stasis of intergovernmental organizations (IGOs). Continued growth of IGOs is constrained by the intrinsic difficulty of creating them and by crowding in their dense institutional environment. In contrast, the emergence of PTROs has been facilitated by shifts in technologies and public attitudes; PTROs also benefit from intrinsically lower entry costs, greater flexibility and a more open institutional space, which allows them to enter favorable "niches." We illustrate this comparison with examples from contemporary climate governance.

The institutions of world politics are increasingly diverse. Formal intergovernmental organizations (IGOs) and treaty bodies are not the sole institutional forms; informal intergovernmental institutions, transgovernmental networks, public-private partnerships, private transnational regulatory organizations (PTROs) and other novel organizational forms also engage in governance. This complex and shifting constellation of institutions is the hallmark of the contemporary era of global governance.

In the decades after 1945, international and supranational institutions grew apace. The UN system expanded to include dozens of specialized agencies, programs and commissions; other functional IGOs, notably the World Trade Organization, appeared and gained influence; European institutions expanded dramatically. Multilateral treaties likewise multiplied; during the 1990s, for example, environmental agreements in force grew by nearly 150%.[1] In environmental governance alone, the UN Environment Management Group now includes 46 IGOs and treaty secretariats.[2] However, in the early years of this century formation of IGOs has decreased by some 20%, and the growth in environmental multilateral treaties has slowed still more dramatically.[3] Joost Pauwelyn and colleagues even argue that international law is "stagnating."[4]

Yet new organizational forms have emerged and expanded rapidly, seeking to satisfy increasing demands for governance. At the international level, states have created informal institutions[5] and plurilateral "clubs,"[6] such as the G20 and other "G-groups." In response to increasing institutional fragmentation, states have also established meta-institutions to coordinate other entities; examples include the High Level Political Forum for sustainable development[7] and the G20 for financial regulation.[8]

IGOs have created their own "emanations."[9] National regulatory agencies have established influential transgovernmental institutions,[10] such as the Basel Committee on

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[1] Authors' calculations based on data from Ronald B. Mitchell. 2002-2012. *International Environmental Agreements Database Project (Version 2012.1)*, available at: http://iea.uoregon.edu/page.php?file=home.htm&query=static. Accessed: 29 November 2012.

[2] http://www.unemg.org/index.php/2013-04-23-12-44-56/2. Similarly, Keohane & Victor 2011 maps the numerous IGOs and treaty bodies involved in climate change. See also Zelli and van Asselt 2013.

[3] Authors' calculations based on data from Ronald B. Mitchell. 2002-2012. *International Environmental Agreements Database Project (Version 2012.1)*, available at: http://iea.uoregon.edu/page.php?file=home.htm&query=static. Accessed: 29 November 2012.

[4] Pauwelyn, Wessel, and Wouters 2012.

[5] Vabulas and Snidal 2013.

[6] Keohane and Nye 2001.

[7] Author.

[8] Viola 2014

[9] Shanks, Jacobson, and Kaplan 1996.

[10] Keohane and Nye 1974.

Banking Supervision.[11] Sub-national governments have also established transnational networks, such as the C40 Cities Climate Leadership Group. And transnational public-private partnerships (PPPs) have expanded and gained official recognition, as at the 2002 World Summit on Sustainable Development.[12] These trends led the *Yearbook of International Organizations* in 1981 to create a new category – organizations with "non-formal, unconventional or unusual" structures.[13] In parallel, informal lawmaking has increased since the mid-1990s.[14]

Perhaps most striking, private transnational regulatory organizations (PTROs) have proliferated, fueled by growing numbers of NGOs, other civil society groups and business organizations addressing social and environmental issues. To be sure, NGOs themselves frequently engage in traditional advocacy or service provision, while many business organizations engage in lobbying. But a growing number of organizations established by NGOs and business engage directly in transnational governance, adopting, monitoring and enforcing standards of conduct for business and other targets, on regulatory issues from worker rights to climate change. These diverse new organizations pose a challenge to international relations scholars. In the past, one could explain outcomes in world politics by focusing on the now 193 nation-states that are members of the UN. One could also plausibly analyze the hundreds of IGOs. But how can one systematically study the tens of thousands of diverse public and private organizations that now comprise the landscape of global governance? Recent work on regime complexity, institutional interplay and polycentrism *begins* to analyze and explain the causes and effects of the new empirical reality.[15] But that work remains in its early stages, theoretically and methodologically.

Moreover, existing explanations provide little analytical leverage on how arrays of organizations are likely to evolve over time. Are the new institutional forms passing fads? Or will they become lasting fixtures in global governance? Will still newer forms emerge in response to changing conditions? Existing theories tell us little about the future pathways of today's complex governance landscape.

In this paper, we introduce a new analytical approach to help describe and explain that landscape: *organizational ecology*. Deriving from pioneering work by Michael Hannan and colleagues in the 1980s and 1990s, organizational ecology is the study of aggregate changes in the types and numbers of organizations. It has not been

[11] Slaughter 2004.
[12] Keohane and Nye 1974; Slaughter 2004; Betsill and Bulkeley 2006; Andonova 2010.
[13] Union of International Associations (UIA) 2009, 404.
[14] Voight 2012.
[15] Young 2002; Raustiala and Victor 2004; Ostrom 2010; Keohane and Victor 2011; Oberthur and Stokke 2011.

systematically applied to institutions of global governance. Yet organizational ecology addresses the core question we highlight here: "Why are there so many (or so few) kinds of organizations?"[16] The theory of organizational ecology "aims to explain how social, economic and political conditions affect the relative abundance and diversity of organizations and to account for changing composition over time."[17]

Organizational ecology focuses on *populations* of organizations; much empirical research has focused on populations of businesses, such as banks, day care centers and restaurants of different types. Organizational ecology analyzes how populations like these are defined in interaction with their audiences; how members of a population compete with one other for resources within its organizational niche; and how populations interact with one another. In analyzing changes within and across populations over time, organizational ecology rejects the notion that change occurs principally through organizations adapting to new conditions: most organizations exhibit too much inertia for large-scale adaptation to occur. Instead, organizational ecology explains change as driven primarily by *selection*: new organizational forms enter and succeed, and other forms fail and exit, in response to changing conditions. Organizational ecology also examines *life cycles* of organizational growth, competition and decline. Because it is such a close theoretical fit, organizational ecology provides valuable analytical leverage on the puzzle of growing institutional diversity in global governance.

The aggregate emphasis of organizational ecology, however, causes it to overlook important features of politics, especially those involving agency, organizational goals beyond mere survival, and conscious cooperation. We therefore do not put it forward as a *substitute* for actor-centric theories of politics, but rather as a *complementary* theoretical framework that can provide new insights. To a considerable extent, the two approaches are consistent and mutually reinforcing; for example, the notion of resource competition within an ecological niche amplifies the types of constraints understood to shape the behavior of organizational agents. But other facets of organizational ecology require a *gestalt shift* from the usual focus on actors with differential power and capabilities, pursuing strategies subject to constraints.[18] *What can we learn about global governance by broadening our focus to examine changes in the size and composition of organizational populations based on rates of organizational entry and exit?*

To develop this synthetic approach, we focus on the emergence and viability of a rapidly expanding organizational form: *private transnational regulatory organizations,* or PTROs. PTROs are established and governed by actors from civil society, business and

[16] Hannan and Freeman 1989, 7.
[17] Baum 2002b.
[18] Keohane 1984; Koremenos, Lipson, and Snidal 2001.

other sectors, in varied combinations. They set standards of conduct for business and other targets; they also promote, monitor and enforce those standards; and they conduct related administrative activities.[19] PTROs are particularly numerous in environmental politics. To take one well-known example, the Forest Stewardship Council is a private multi-stakeholder organization that creates regulatory standards for "sustainable" forestry; it certifies forests and forest products against those standards, accredits independent auditors and sponsors compliance audits. Similar programs exist for fisheries, organic food, building practices and many other areas. We focus here on private transnational regulatory organizations addressing climate change.

We compare the recent appearance and proliferation of PTROs with the relative stability in the numbers of multilateral IGOs. Such stability may not be surprising in view of the well-known constraints IGOs face – although organizational ecology helps us understand stasis as well as growth. But the astonishing growth in the number and variety of PTROs is clearly a phenomenon that needs to be explained. As recently as 1985, such organizations barely existed.[20] Yet today, in climate change alone, Bulkeley et al. identify 60 transnational institutions, most of them PTROs or public-private collaborations;[21] Abbott modifies that database to analyze nearly 70 institutions;[22] Hoffman catalogues some 60 transnational "climate experiments;"[23] Green analyzes relationships among 30 transnational institutions that set standards for voluntary carbon markets,[24] and Hale and Roger discuss how states orchestrate 75 transnational climate governance initiatives.[25] Almost all of these organizations have been created since 2000.

In short, private transnational regulatory organizations are engaged in governance; are novel; are proliferating; and have implications for governance outcomes in significant issue areas, such as climate change. They exemplify the growing organizational diversity that motivates this paper. If our analysis helps illuminate their expanding role, it should be applicable, with appropriate modifications, to other organizational forms as well.

We consider two categories of explanatory variables drawn from organizational ecology. The first includes *intrinsic* features of particular organizational forms, notably

[19] Such activities include operating accreditation systems for independent monitors and maintaining registries of certified projects or facilities. Private transnational organizations, a more inclusive class, also perform other functions, such as managing and financing operational projects and disseminating information (Abbott 2012). We focus here on the subset of regulatory organizations.

[20] Hale and Roger 2014.

[21] Bulkeley et al. 2012. The authors define "transnational" organizations as those formed by non-state actors instead of or in addition to states.

[22] Abbott 2012.

[23] Hoffmann 2011.

[24] Green 2013.

[25] Hale and Roger 2014.

their entry costs, degree of autonomy from principals, and inherent growth rates. The second includes characteristics of the institutional *environment* – in ecological terms, the "niche" in which a particular form operates – notably the availability of resources relative to the density of organizations and conditions of competition within the niche. Organizational ecology identifies striking regularities in the conditions of competition over time: once a suitable organizational form appears and gains legitimacy, its numbers rise rapidly while resource competition remains limited; but they level off and often fall as competition intensifies.

We supplement these organizational ecology variables with others drawn from actor-centric theories of politics, which focus on the behavior of autonomous organizations under constraints. New organizational forms are likely to emerge and prosper not only when changing conditions create new niches, but also when organizational entrepreneurs identify new governance approaches that avoid existing constraints, and when organizations (and the principals that create them) exhibit the strategic flexibility to pursue those approaches.[26] In addition, whereas organizational ecology assumes strong organizational inertia, we emphasize that organizations (and their principals) select and pursue *strategies* to respond to opportunities and cope with constraints.

We thus combine the macro- or population-level focus of organizational ecology with a micro- or organization-level focus on strategies. At the micro-level, organizations are autonomous agents pursuing strategies and interacting with other organizations. Their strategies are the mechanisms that link micro-level explanatory factors with macro-level outcomes: the emergence, viability and growth of new organizational forms.[27]

Part I presents key concepts relevant to our analysis. Part II introduces the theoretical framework of organizational ecology, focusing on intrinsic organizational features and environmental conditions, and the complementary actor-centric approach, focusing on organizational strategies. Part III develops our synthetic theory, addressing in turn the emergence of private transnational regulatory organizations (PTROs) and their continued viability, both in comparison to intergovernmental organizations (IGOs). Part IV presents empirical examples from contemporary climate governance, in which numerous IGOs and PTROs are actively engaged.[28] This empirical discussion is in the nature of a "plausibility probe:" we examine a "most-likely case" – climate governance –

[26] Keohane 1982; Keohane 1984; Mattli and Woods 2009; Author.

[27] Some outcomes may be recursive: organizational strategies that affect the relative stability and growth of different organizational forms influence future strategies.

[28] Andonova, Betsill, and Bulkeley 2009; Bernstein et al. 2010; Hoffmann 2011; Keohane and Victor 2011; Abbott 2012.

in which the impact of as-yet-understudied explanatory variables and causal mechanisms should be evident.[29]

I. Key Concepts

This section introduces the basic concepts relevant to our analysis. Section A defines our unit of analysis; section B introduces the fundamental ecological concepts of populations, resources and niches; and section C introduces institutional density.

A. Institutions and organizations

An *institution* is a set of interconnected rules and practices that prescribes behavior on particular issues. Sociologists speak of "the institution of religion" or of marriage; these are "diffuse" institutions: they involve general practices whose specific features vary across place and time. In contrast, we focus on *specific institutions*: sets of interconnected rules and practices designed to achieve specific purposes.[30] The UN Framework Convention on Climate Change (UNFCCC) and the Montreal Protocol regime on ozone-depleting substances are specific institutions.

Institutions have varying degrees of agency, the quality that allows them to make strategic choices. Some institutions have no ability to act independently; bilateral investment treaties are an example. By contrast, institutions capable of exercising agency are *organizations*.[31] Intergovernmental organizations such as the United Nations Environmental Program (UNEP), and PTROs such as the Greenhouse Gas Protocol and Forest Stewardship Council (FSC), are organizations.[32]

B. Populations and niches

The major units of analysis in organizational ecology are *populations* of organizations with particular forms. Because the theory emphasizes the process of selection, it is concerned with factors that affect the "vital rates" of organizations within a population – especially their rates of "birth" (founding) and "death" (dissolution or exit). Vital rates determine the growth rates and, over time, the viability of organizational forms. Varied exogenous factors can influence vital rates, but the theory "places attention squarely on *interactions within and between populations of organizations*."[33]

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[29] Eckstein 1975.

[30] Keohane 1988.

[31] Compare the definition in Scott 1998, 25. There is no single agreed-upon definition of organizations in the OE literature. See Baum 2002a for an overview of various definitional approaches. For our purposes, an IGO is comprised both of its secretariat and its state members, since the members always exercise significant influence, if not control, over an IGO's activities.

[32] On the ability of intergovernmental organizations to exercise agency, see Baum 2002.

[33] Hannan and Freeman 1989, 92.

Populations and the organizational forms that comprise them can be defined around shared organizational features, such as goals, core technologies and forms of authority.[34] A population defined in this way usually forms a recognizable class, such as trade unions, hospitals or fast-food restaurants.[35] Indeed, recent work in organizational ecology suggests that the perceptions of relevant audiences define and constitute populations.[36] Within a population, individual organizations may vary in size, resources and other features; for example, some may be generalists, others specialists. "Segregating factors," such as social networks and institutional processes that reinforce separate identities, keep populations distinct; "blending processes," such as restructurings that recombine organizational features, bring them together.[37]

In ecological terms, a fundamental feature of a population is its members' dependence on a common set of resources. Because of this common dependency, organizations within a population respond similarly to changes in their environment. A population can thus be seen as occupying an ecological *niche* defined by its required resource set: "the fundamental niche of an organizational form consists of the social, economic, and political conditions that can sustain the functioning of organizations that embody the form."[38] If two organizational forms require different resources, then they occupy different niches.[39]

Among climate change PTROs, for example, organizations that set standards for and certify emissions reduction credits for sale in the voluntary carbon market might constitute a population. All such organizations share important features: they pursue similar goals, apply similar "business models" and rely on similar forms of authority. PTROs that set standards for city renewable energy programs would constitute a different population, distinguishable on each of these features, and perceived as distinct by relevant audiences.

Climate change PTROs that regulate and certify carbon credits all require similar resources. These include rule-making authority recognized by market participants, legitimacy within relevant stakeholder communities, members (individual or organizational), sufficient funding (from members, contributors, fees, foundations or other sources), access to essential actors, and administrative resources. Within the

[34] Hannan and Freeman 1989.

[35] Analysts often use "native" or "conventional" classifications like these, based on understandings of participants, legal classifications and organizational practices. Ibid., 45–6; 62–5.

[36] Hsu, Hannan, and Koçak 2009; Pontikes 2012.

[37] Hannan and Freeman 1989, 57–60.

[38] Hannan and Carroll 1992, 28.

[39] Each population need not have a unique resource set; some resources – such as information and technology – can be shared across organizations and even populations.

population, however, organizations may have larger or smaller budgets, more or less stringent standards and other individual variations.

When an organization modifies its operations such that it requires a different mix of social, economic and political resources – e.g., when a PTRO targets adaptation rather than mitigation, or renewable energy programs rather than carbon credits – it shifts to a different niche and population. Populations that affect one another's resources form an ecological *community,* which co-evolves within their shared environment.

C. Institutional density

Institutional density is a significant feature in organizational ecology. In a dense population, organizations have greater aggregate demand for resources, and must compete more vigorously for resources, than in a sparse population. For many populations – e.g., fast food restaurants – density is largely a function of the number of organizations. However, for institutions that engage in multiple, diverse activities – such as IGOs – density is better understood as the extent and complexity of governance activities being undertaken by organizations within the population. Even if there are relatively few organizations, if each undertakes extensive, complex activities, then resource demand, overlap and competition can all be high, and unoccupied governance space limited. In this instance, and indeed in many areas of world politics, institutional density is more than a mere count of organizations; it is the amount of institutionalized governance occurring.

II. Organizational Ecology and Actor-Centered Theory

We view organizational ecology and traditional agent-and-strategy-centered theories of politics as *complementary* ways of understanding organizational diversity. We introduce the two analytical frameworks in this section.

A. Organizational Ecology

Organizational ecology emphasizes that different organizational forms possess *intrinsically different features,* especially entry costs and growth rates, independent of resource availability and conditions of competition. Some forms are difficult to establish but persistent; others are easy to establish but more ephemeral in response to environmental changes.[40] *Characteristics of the institutional environment,* especially those related to resource availability and competition, also impact vital rates.

[40] Hannan and Freeman 1989, 117–23.

We begin with intrinsic features. Some organizational forms require substantial investments of personnel, resources and time to establish. Organizations of this type may ultimately become large and stable, but resource limitations imply that relatively few can be created. As a result, the growth rate of the form is limited. In addition, long "gestation periods" create the risk that environmental conditions will change – e.g., opportunities will disappear – by the time organizations begin operations.

Other organizational forms, in contrast, can be established with relatively small investments. They often have simpler structures and operate at smaller scales than organizations of the first type; knowledge about their design and management is more readily available and transferable. Such organizations may ultimately be smaller and less stable than those of the first type, but more of them can be created within a given period of time, giving the form a high intrinsic growth rate. Short gestation periods allow organizations to emerge quickly in response to new environmental conditions, such as new opportunities or demand.

Organizations of these two types pursue classic, contrasting ecological strategies.[41] The slow-but-stable type produces relatively few units (cf. offspring), but with heavy investment in each one. As a result, most units that are founded survive; their stability enables them to contend with difficult resource conditions. Principals often favor such organizations, moreover, because their stability (or inertia) renders them predictable. The rapid-but-fragile type, in contrast, produces many more units but with less investment in each. As a result, the survival chances of individual units are relatively small; in favorable conditions, however, the form as a whole can expand rapidly.

As noted above, *characteristics of the institutional environment* also affect vital rates and viability. When the resources a population requires are abundant, it can expand in numbers and activities with little constraint; the "carrying capacity" of its niche is high. When resources are scarce, congestible or exhaustible, however – as is frequently the case – carrying capacity is limited. In institutionally dense settings, organizations' standards and other activities are likely to overlap,[42] and organizations will be forced to compete for resources.

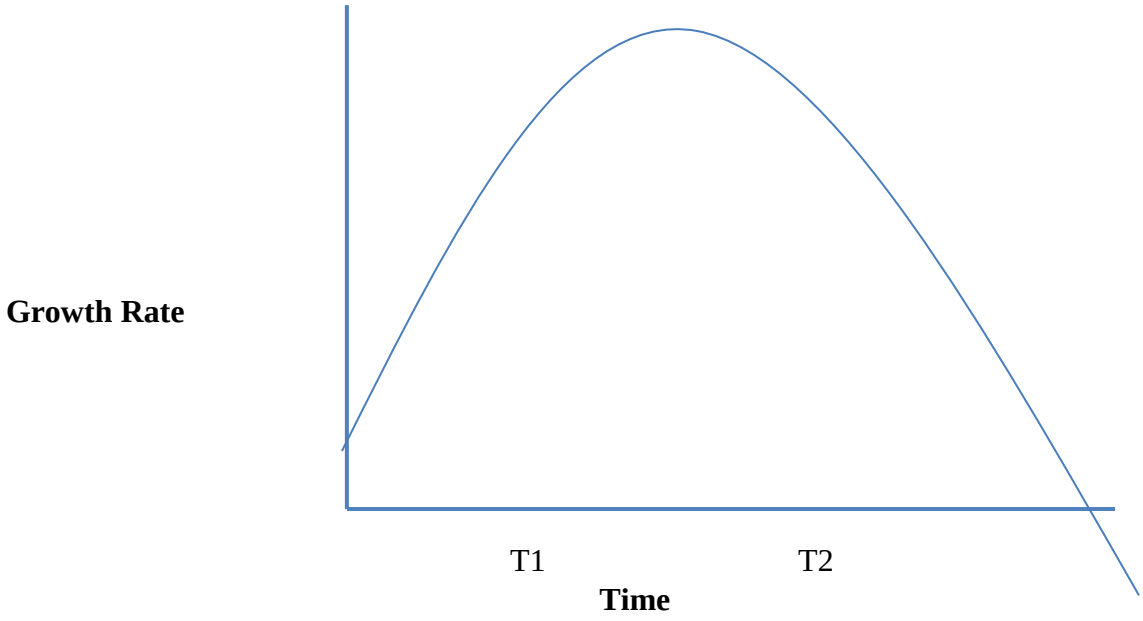
The carrying capacity of niches changes over time. Some changes result from exogenous developments such as increases or decreases in particular resources. But many changes in carrying capacity result from endogenous interactions among organizations within a population. Here, organizational ecology posits broad regularities, observed among labor unions, financial institutions, life insurance companies, newspapers, breweries and other organizational forms over time spans of 100 to 300

[41] These are referred to as K and r strategies, respectively. Ibid., 118.
[42] Raustiala 2012.

years.[43] When an organizational form well matched to current conditions first emerges, carrying capacity is high: the number of organizations grows rapidly at first; indeed, its growth rate may increase for some time. Eventually, however, growth levels off and declines, as depicted in Figure 1; it may even turn negative.

[43] Hannan and Carroll 1992, 7–12.

Figure 1: Organizational Growth Rates over Time



The explanation organizational ecology offers for this regularity emphasizes two processes: *legitimation* and *competition*. First, when a new organizational form originates, its members need to be seen as legitimate in the environments they enter. Individual organizations will pursue varied legitimation strategies. In an ecological perspective, however, the mere fact that the number of organizations is increasing will gradually make the form more widely acceptable to key audiences[44] under the logic of appropriateness.[45] Initially, then – over the rising part of the growth rate curve – there is a positive relationship between institutional density and growth rates through the mechanism of legitimation. But this process is subject to diminishing returns: eventually, additional organizations will not further enhance legitimacy.

Second, as more organizations occupy a niche, resource constraints – i.e., carrying capacity – begin to bind: new organizations find it more difficult to gain adherents, members, financing and other resources; some organizations may lose resources and be forced to exit.[46] Barring an influx of new resources, institutional density and competition gradually bend the growth rate curve downward toward stability or decline, as shown in Figure 1. Over time, then, there is a negative relationship between institutional density and growth rates through the mechanism of competition.

B. Organizational Strategies

Organizational ecology is largely a structural theory. It asks: given environmental constraints, when do populations thrive or decline? In contrast, actor-centered theories of politics emphasize the agency of individual actors and organizations, including individuals, firms, other organizations and states. We operationalize this agency by examining organizational strategies: durable plans, associated with organizational identities, which shape organizational behavior. Different strategies are available to different organizations within a population. Faced with intrinsic and environmental constraints, organizations will select among the available strategies to ensure their survival or promote growth, and to pursue their substantive goals.

A related intrinsic feature of organizations is strategic flexibility, the ability to select and adopt appropriate strategies in timely fashion. Strategic flexibility facilitates organizational adaptation, but more broadly underpins the ability of organizations – especially relatively weak and vulnerable forms – to deal with resource constraints and competitive conditions. Strategic flexibility depends partly on features like those that determine intrinsic growth rates; it is also influenced by organizational autonomy, which facilitates timely decisions and actions. Autonomy reflects internal characteristics such

[44] Hannan and Carroll 1992, 51
[45] Keohane 1984, 53.
[46] Hannan and Freeman 1989, 132–33.

as the nature of organizations' mandates, the preferences of their principals and the oversight mechanisms available to principals.

We begin from the premise that all organizations, public and private, pursue both substantive and organizational goals. Organizations seek both to maintain (or expand) their own autonomy and authority and to achieve their substantive goals, which may include social goods such as slowing climate change.[47] In short, organizations typically have goals beyond mere survival. Even so, survival is a necessary condition; all organizations must therefore adopt strategies to meet their minimum resource needs.[48]

Assuming resource constraints, organizations (directed by their principals and staff) often have incentives to *compete* for resources, as organizational ecology assumes. In addition to financing and other material resources, they compete for authority. For both PTROs and IGOs, authority is largely derived from regulatory targets (private actors and states, respectively) that must agree to accept rules the organizations promulgate.[49] Organizations also compete for legitimacy within wider publics.

Yet organizations (and their principals and staff) also have incentives to avoid intense competition. Competition diverts scarce resources from other activities; it may lead to costly discord and conflict. Aggressive measures to gain certain resources, e.g., authority from targets, may impede obtaining other resources, e.g., legitimacy within civil society. Where multiple organizations' rules target the same actors, competition creates rule uncertainty, potentially allowing targets to free ride.

In such cases, organizations may reciprocally adjust their activities so as to reduce resource competition; that is, they may choose to *cooperate* instead of compete.[50] Alternatively, certain organizations may simply *adapt*, modifying their practices unilaterally.[51] The founders of organizations make similar strategic decisions at the time of entry: for example, they may choose to enter dense domains intending to compete, or may select domains where competition is limited.

The availability of organizational strategies – including competition, cooperation, adaptation and variations thereof – is shaped by two major factors. The first is *relative power*. Power derives from the formal authority, legitimacy, and other material, ideational and positional resources organizations possess. Power generates "go-it-alone" capacity: the ability **not** to have to cooperate or adapt in competitive situations.

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[47] Biermann and Siebenhuner 2009.

[48] Bob 2002; Cooley and Ron 2002; Wong 2012, Bush 2013.

[49] On the dynamics between rulemakers and ruletakers, see Lake 2009, chap. 1. On competition for ruletakers, see Green 2014, chap. 3.

[50] Keohane 1984, 53.

[51] Ibid., 51–55.

Relatively powerful organizations within a population can avail themselves of more and different (more competitive) strategies than can weaker ones.

The second factor is the existence of *adaptive opportunities*, features of the environment that allow organizations to pursue strategies of adaptation.[52] Where adaptive opportunities are plentiful, an organization can unilaterally (re)focus its activities on areas characterized by more abundant resources and/or less intense competition (because of lesser institutional density). An organization might, for example, target different actors or behaviors within the same issue area (e.g., from carbon offsets to adaptation within climate). It might instead "exit" that domain, exit from rulemaking by shifting to operational activities, or exit entirely by winding up operations.[53]

Where power disparities are large, powerful organizations will rarely be required to cooperate or adapt; weak organizations, however, will often be forced to do so. If weak organizations lack adaptive opportunities, they will either have to engage in costly competition or else seek cooperation. If they are even weaker than their partners, cooperation will be asymmetrical, entailing more extensive adjustments.[54]

C. Strategic Choices

Here we describe more fully the three broad strategies identified above: *competition*, *cooperation* and *adaptation*. Each strategy is a set of possible actions conditional on the actions of other organizations, applied over time. Strategies of cooperation and adaptation seek to limit resource competition; strategies of competition do not. We roughly order the categories, and the specific strategies within them, from those available to relatively strong organizations to those available to relatively weak ones.

Competition

The toughest competitive strategy is to attempt to dominate an issue area: to subordinate competitors to an organization's policies or drive them out of the niche. For governance organizations, domination occurs when an organization's rules are adopted widely or even universally. In this sense the International Monetary Fund dominated international monetary policy under the fixed-rate Bretton Woods System until 1971; the World Bank dominates much aid policy; and the World Trade Organization dominates multilateral trade policy. In climate change, by contrast, no organization dominates.

Domination does not necessarily require state-based authority; even private or voluntary organizations can dominate a niche. For example, the International Organization for Standardization (ISO) adopts standards governing production processes

[52] Adaptive opportunities may also facilitate adjustment.
[53] Hirschman 1970.
[54] Keohane and Nye Jr. 1977, chap. 1.

and products. Failure to utilize these standards often results in producers' inability to enter certain markets. Thus, even though ISO standards are voluntary, they dominate the field: they face little competition and are adopted worldwide.

Competition remains an option if attempts to dominate are unsuccessful. Among IGOs, for example, the International Civil Aviation Organization, UNFCCC and European Union all compete to regulate aviation carbon emissions. Among PTROs, forestry schemes such as FSC and the Programme for the Endorsement of Forest Certification (PEFC), based in civil society and business respectively, compete vigorously for authority, adherents, legitimacy and financing. When competing organizations possess different levels of power, however, competition may drive the weaker to cooperation or adaptation. For example, FSC and PEFC compete for approval from the UK government, which utilizes private standards in its procurement policies; when the UK concluded that PEFC standards did not meet its transparency requirements, PEFC was forced to adopt new governance practices.[55]

Cooperation

Organizations facing costly competition may mutually adjust their activities, explicitly or implicitly, or collaborate to use resources more efficiently: that is, they may cooperate. Cooperation may be essentially negative, with organizations mutually rendering their activities more compatible by retrenching, modifying their policies or shifting to less competitive areas. In other cases cooperation may be positive, with organizations actively collaborating, e.g., by pooling resources or coordinating activities to use resources more efficiently.

When organizations have roughly comparable power, they are likely to share any resulting costs more or less equally. IGOs, for whom competition is expensive and adaptive strategies tightly constrained, adopt this strategy fairly frequently. Often, however, IGO cooperation is relatively superficial, consisting of sharing secretariat facilities, meeting jointly or coordinating monitoring and assessment procedures.[56] PTROs may also adopt cooperative strategies, although low-cost adaptive opportunities are often readily available to them. When some organizations are weaker than their partners, cooperation is likely to be adversely asymmetrical, with the weaker forced to make more extensive adjustments and bear greater costs.

Adaptation

[55] Gulbrandsen 2013.

[56] Oberthur 2005. Institutional sociologists refer to such arrangements as "loose coupling:" substructures that organizations create to deal with perceived problems, without interfering with the "core work" of the organization. Meyer and Scott 1983.

As an alternative to cooperation, which entails mutual adjustment, organizations may adapt to competition unilaterally. This strategy involves shifting activities to a niche in which resources are more abundant, institutional density lower, or powerful competitors fewer, so that competition is less intense.[57] A niche might even be empty, or newly created, with targets or behaviors unregulated. For example, when FSC was created, there were no binding international rules on sustainable forest management and no international norms addressing private forest management.

III. The Emergence and Viability of Private Transnational Regulatory Organizations

We can now apply the analytical frameworks of organizational ecology and organizational strategies to help explain the rapid growth of private transnational regulatory organizations, relative to the slowing growth of multilateral intergovernmental organizations. Following organizational ecology, we first analyze the *emergence* of private transnational regulatory organizations (PTROs) as a form; we then consider their continued *viability*, both in comparison to IGOs.

A. Emergence

Organizational ecology, surprisingly, lacks a developed theory of the appearance of new organizational forms. We therefore propose a theory based on the demand for and supply of governance under changing environmental conditions. Supply and demand explanations have been fruitfully applied to related issues;[58] the literature also includes demand-side and supply-side explanations of organizational emergence.[59] Our argument includes three parts: (1) as conditions change and new problems appear, demand arises for appropriate governance responses; (2) existing organizational forms are unable to supply appropriate forms of governance on a timely basis; (3) organizational entrepreneurs identify new approaches that avoid existing constraints, and introduce organizational forms capable of pursuing them. We discuss each part in turn.

1. Demand for governance

In general, the existence of an unsolved cooperation problem generates demand for appropriate governance activities. In the face of collective action problems, however, public dissatisfaction must typically be "activated" to become effective demand. Shocks,

[57] This is similar to Carroll's view of "resource partitioning" 1985 whereby specialist and generalist organizations self-sort into different activities which rely on different sets of resources, including consumers.

[58] See, e.g., Keohane 1982; Keohane 1984; Mattli and Woods 2009.

[59] Slaughter 2004, 200; Büthe 2010; Buthe and Mattli 2011; Author.

disasters, scandals and other "demonstration effects" – revealing the failure of current governance approaches – are common activating forces.[60]

Politically effective agents – norm and policy entrepreneurs, including civil society organizations, industry and interest groups, and government officials – play essential roles in generating public demand, reflecting and focusing diffuse preferences.[61] Political entrepreneurs also challenge interests that may have (partially) captured established institutions.[62] Even in international politics, where states are the crucial *demandeurs,* governmental units, interest groups and other non-state actors often drive state demand.[63] In addition, communications technologies and institutional reforms increasingly allow non-state and sub-national actors to express their views directly in global forums.

2. Constraints on existing supply

When new demand for new governance actions arises, existing organizational forms – here IGOs – can often satisfy it. Multilateral IGOs and treaty bodies have substantial institutional strengths, making them enduring components of the international system.[64] Even large, complex IGOs have proven themselves more adaptable to new conditions than might be expected from an organizational ecology perspective: the International Monetary Fund, World Bank and NATO are significant examples. In addition, numerous IGOs have been created to address newly identified problems.

Yet multilateral IGOs face significant intrinsic constraints in supplying innovative forms of governance. Above all, they operate largely as agents of their member states; when states are unwilling or unable to act, it is difficult for IGOs to do so.[65] In climate change, for example, a substantial intergovernmental architecture has produced only limited progress on emissions reductions, primarily because of state preferences.[66] States are unwilling to commit substantial resources to the problem for strategic and developmental reasons. In many areas preferences diverge, increasingly so with the rise of states such as China, India and Brazil. Climate change has a prisoners' dilemma structure, creating incentives not to contribute or take the lead. And some states prefer statist responses, others flexible, market-oriented solutions.

[60] Mattli and Woods 2009.
[61] Ibid., 22–26. See also Price 2003; Khagram 2004.
[62] Ibid., 15-16
[63] Moravcsik 1997.
[64] Abbott and Snidal 1998.
[65] Author
[66] Hale, Held, and Young 2013.

Member state supervision limits the strategic flexibility of existing IGOs. IGO secretariats and organs generally lack authority to take strong autonomous action without state approval. States exercise close oversight through voting, budgeting and appointment procedures. Consensus or other restrictive decision rules often apply to the authorization of new initiatives. In addition, charter mandates limit IGOs to specific actions and domains – although these may be broadly defined, as with most UN specialized agencies. Mandates also constrain IGOs from abandoning any part of their domains to focus on new issues. Of course, IGOs vary widely on these parameters; some have greater autonomy and flexibility than others.

Creation of new IGOs is also constrained. Multilateral IGOs are organizations of the slow-but-stable type. They include substantial bureaucracies, utilize complex administrative and decision procedures, and require qualified and representative staff. Most important, their formation requires costly political negotiations among diverse states on matters such as organizational mandates and authorities, voting procedures and oversight mechanisms, and financial support. In addition, all IGO member states are drawn from the same pool of 193; new IGOs increase the aggregate burden on these states ("IGO fatigue"), making them reluctant to create new organizations.

The institutional environment, especially the existence of numerous established IGOs, further constrains IGO action. Because of their lengthy historical development, IGOs have moved far along the growth rate curve shown in Figure 1. We would place IGOs around the point labeled T2: after decades of expansion – in both numbers and complexity of activities – their growth rates have plateaued and even declined. In this world of high institutional density, resource competition is intense. This constraint must be considered when deciding whether to enter a population, either by creating a new organization or by initiating new activities.[67]

The organizational strategies of IGOs intensify these conditions of competition. Backed by state authority, IGOs have the potential to dominate their domains. This is an asset for individual organizations, but it shapes IGO strategies in ways that make their position on the curve especially sclerotic. In order to dominate, IGOs must fully occupy their domains, building out their activities to the domain boundaries – at least to the extent their principals and resources allow.[68] IGOs must also fully occupy their domains to fulfill their organizational mandates. The sweeping nature of many IGO mandates

[67] An organization that enters a new area of operations, as the World Bank began to address climate issues with the creation of the Prototype Carbon Fund, also makes an entry decision. On the Bank's decision, see Andonova 2010, 39–40.

[68] IGO "emanations" are part of this strategy. Shanks, Jacobson, and Kaplan 1996. Kahler 2009, 192 suggests that IGOs often expand their activities to the limit of their material and cognitive resources, and even beyond. See also Johnson and Urpelainen 2012.

exacerbates the problem: for example, the 1972 General Assembly resolution establishing UNEP mandated it to promote international cooperation and appropriate policies "in the field of environment."[69] Member states often support IGO building-out strategies as conforming to mandates and avoiding the costs of establishing new organizations.[70]

The strategy of fully occupying domains tends to fill the available organizational space. The resulting institutional density makes it difficult for existing IGOs to adapt to demand by entering new areas, because these are typically already occupied; it also increases the costs of entry for new IGOs. In both cases, IGOs and their founders must contend with dense complexes of organizations and rules, seeking to avoid or dealing with potential overlaps and conflicts.[71] While cooperation is sometimes possible, IGOs are often left to pursue costly competition in congested organizational spaces.

3. New sources of supply

New organizational forms appear when organizational entrepreneurs seeking to respond to demand for governance identify institutional arrangements that can avoid the constraints faced by existing organizational forms. While functional theories predict that institutions will emerge in response to cooperation problems,[72] this is not a deterministic process: it is difficult to predict if or when a particular organizational form, *a fortiori* a particular organization, will appear.[73] The increasing complexity of global governance makes prediction even more difficult. However, where demand is strong and appropriate conditions exist, one can at least predict that *some* new organizational form capable of responding to that demand is likely to emerge.[74]

PTROs benefit from contemporary conditions that facilitate organizational innovation and private collective action. Primary among these are technological developments. Just as new technologies have fostered the creation and explosive growth of many other organizational forms, from newspapers in the 19th century to social media companies today, new communication technologies have been an important factor in the rise of NGOs, transnational advocacy networks and other private organizational forms.

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[69] UNGA Resolution 2997 (XXVII), 15 Dec. 1972.

[70] Johnson and Urpelainen 2012. This is also consistent with Jupille, Mattli and Snidal 2013 who argue that using existing institutional is more likely than creating new ones since states are boundedly rational. This approach increases the likelihood of substantive overlap highlighted by regime complex theory. States may also encourage IGOs to overlap competitors' domains, the technique of "regime shifting." See Raustiala and Victor 2004; Helfer 2004.

[71] Raustiala and Victor 2004; Alter and Meunier 2006; Keohane and Victor 2011; Abbott 2012.

[72] Keohane 1984.

[73] Astley 1985, 231 argues: "The eventual adoption of a particular innovation typically depends on a multitude of chance events. The random element in change is crucial…."

[74] Ibid., 230 argues that the evolution of organizations therefore proceeds through a process of punctuated equilibrium.

The Internet and social media differentially advantage dispersed actors with limited material resources, creating new opportunities for NGOs, business firms and other private actors to create network-based PTROs and other transnational organizations.

New ideas and norms – social technologies – also facilitate organizational innovation. Ideas provide options for governance entrepreneurs, shared bases for coalition formation, and arguments for organizational legitimacy.[75] PTROs have benefitted from a widespread ideological shift away from reliance on the state and in favor of private and market solutions, as well as reduced confidence in public institutions and a general increase in private authority.[76] More concretely, NGOs, business groups and "pioneer" PTROs introduced organizational models that subsequent entrepreneurs have adopted.

The intrinsic features of private transnational regulatory organizations further facilitate their creation. Most PTROs are of the rapid-but-fragile type. A few entrepreneurial actors can found a PTRO in a short time, at limited expense and with little if any external oversight. PTROs can, moreover, draw from an extremely wide pool of potential entrepreneurs, including NGOs, other civil society organizations, technical experts and business associations. PTROs also have flexible forms and mandates, allowing founders to experiment with organizational features and adjust them to evolving conditions. In sum, PTROs face low entry costs.[77]

Finally, as organizational ecology would emphasize, at this early stage in their history PTROs enter a world of only modest institutional density, limiting resource competition among them and providing numerous niches in which they can gain footholds and thrive. In Figure 1, we would place PTROs around the point labeled T1 – their growth rates have increased rapidly and are probably still increasing in many issue areas. Over time, as their world becomes fuller, however, we expect PTROs to operate differently, as discussed further below.

B. Viability

Once a new organizational form appears in response to demand, it must be ecologically viable: if it is to supply appropriate governance actions over time, then its vital rates (of birth and death) must be positive. As noted above, organizational ecology identifies two processes that explain the success of new forms.

The first process is legitimation, where growth in numbers is self-reinforcing. While legitimacy is difficult to observe directly, this appears to be a significant factor in the

[75] Mattli and Woods 2009, 36–39.
[76] Pattberg 2007; Bernstein 2002.
[77] Compare Bernstein et al. 2010.

viability of PTROs. Many such organizations adopt explicit legitimation strategies, such as following norms and procedures approved by states:[78] carbon offset PTROs recognize Clean Development Mechanism rules; social and environmental PTROs within the ISEAL Alliance follow standard-setting and certification procedures approved by the WTO and ISO.[79] As a result of these strategies, as well as growth in numbers, the agency and authority of PTROs have increased rapidly, with public and private actors alike adhering to, endorsing and ratifying their rules.[80] For example, the last two global summits on sustainable development emphasized the formation of PTROs and public-private partnerships and the submission of voluntary private and public commitments.[81] To be sure, lively debate over the "normative legitimacy" of PTROs continues,[82] but their "sociological legitimacy" appears increasingly established.

The second essential process is resource competition, which intensifies over time with increasing institutional density. While PTROs vary widely in power and capabilities, few possess the authority to dominate niches; this intrinsically exposes them to competition. As a class, however, PTROs have strong incentives to limit competition: they represent a rapid-but-fragile organizational form, lacking state authority and relying on voluntary participation. The stress of competition can easily cause many units to fail. Nonetheless, such forms can expand rapidly in favorable conditions. Importantly, dynamic environments strongly favor rapid-but-fragile organizational forms.

As organizational ecology emphasizes, PTROs benefit from the wealth of adaptive opportunities provided by low institutional density. Equally important, however, is the strategic perspective: PTROs possess intrinsically high strategic flexibility, enabling them to seize beneficial adaptive opportunities. Compared to IGOs, PTROs typically feature non-intrusive oversight and relatively simple decision procedures (multi-stakeholder organizations such as FSC, however, have more complex procedures). Most PTROs have flexible mandates that can be easily modified, as well as entrepreneurial leaders and principals. In addition, PTRO formation costs are low and gestation periods short.

Because of this strategic flexibility, *at any point on the growth rate curve* PTROs can pursue adaptive strategies that limit costly competition and enhance access to resources. To be sure, some PTROs, like the forestry schemes mentioned above, engage in intense,

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[78] Abbott and Snidal 2009b, 559–60; Author.

[79] ISEAL Alliance, Code of Good Practice for Setting Social and Environmental Standards, Code of Good Practice for Assuring Compliance with Social and Environmental Standards, available at http://www.isealalliance.org/our-work/codes-of-good-practice.

[80] E.g., Pattberg 2007; Pattberg and Stripple 2008.

[81] On the "type II partnerships" created around the 2002 World Summit on Sustainable Development, see. Andonova and Levy 2004. On the "voluntary commitments" submitted around the 2012 UN Conference on Sustainable Development, see http://www.uncsd2012.org/voluntarycommitments.html.

[82] E.g., Bernstein and Cashore 2007; Black 2008; Fuchs and Kalfagianni 2010; Bernstein 2011.

protracted competition. But adaptive opportunities and strategic flexibility lead many to pursue less exclusive or zero-sum strategies. In particular, PTROs frequently seek out unoccupied or sparsely populated niches, where they can thrive without the debilitating effects of intense competition. Once a suitable niche has been identified (or constructed), low entry costs and strategic flexibility enable PTROs to enter it rapidly.

While niche-finding benefits individual PTROs, it also affects the conditions of competition for PTROs as a class. By shifting to more resource-abundant or less competitive niches, PTROs retreat from densely occupied domains rather than attempting to occupy and defend them, as IGOs do; as a result, their organizational space becomes less congested. Where PTROs construct new niches, they expand their organizational space. For these reasons, PTROs may be able to expand for longer than less flexible organizational forms before their growth rate curve turns downward.

Private transnational regulatory organizations have a further strategic advantage: they can engage in activities that complement and enhance the policies of IGOs and other public institutions. In fact, this is another form of cooperation to enhance the availability of resources, one that spans different populations. Notably, PTROs often adopt standards and implementation mechanisms that parallel IGO rules and procedures, but with adjustments to apply to business or other private targets rather than to states. In climate change, for example, PTRO standards and mechanisms in the voluntary carbon market complement the Clean Development Mechanism, European Trading System and other public initiatives. In other cases, PTROs enter areas where IGOs have been unable to act, as the FSC did.

By cooperating with public organizations, PTROs gain access to important resources. Relationships with IGOs and other governmental bodies can strengthen PTRO authority, leading to broader acceptance, especially where public support is strong and express. Similarly, such relationships enhance legitimacy within many stakeholder communities. IGOs can also provide material and ideational support, enhancing the competitive position of PTROs within their populations.

For their part, IGOs often need mediators between themselves and the private targets of their rules and programs. In some cases, IGOs delegate authority to PTROs to act as their agents.[83] In other cases they forge softer links through "orchestration," in which "an IGO enlists and supports intermediary actors to address target actors in pursuit of IGO governance goals."[84] Both relationships are mutually beneficial: they provide IGOs with access to private targets, information and other capabilities they may lack, while reducing their transaction costs (as IGOs deal only with one or a few intermediaries rather than a

[83] Author.

[84] Abbott, Genschel, Snidal & Zangl 2014, 6.

multitude of targets); they simultaneously empower PTROs and provide them access to valuable resources and niches.

Together, then, the combination of organizational ecology, oriented toward populations in niches, and a focus on organizational strategies, provides a compelling account of the emergence of private transnational regulatory organizations in a governance system previously dominated by intergovernmental organizations, and of the ability of PTROs to gain viability and expand, supplying governance on a continuing basis.

IV. Organizational Ecology and Strategies in Climate Governance

This section probes the plausibility of our analysis by examining the global governance of climate change. Climate governance is a politically salient area with high and increasing density of both IGOs and PTROs. Organizations of both types adopt and implement rules and standards and engage in related administrative activities.

We present evidence from climate governance that supports our two major explanatory arguments:

A. (1) Intrinsic organizational features of IGOs, especially high entry costs and limited strategic flexibility, along with (2) the strategy of fully occupying their domains, and (3) the accumulated density of their institutional environment constrain the ability of IGOs to supply appropriate forms of governance in response to new demand.
B. By contrast, (1) intrinsic features of PTROs – particularly low entry costs – facilitate their emergence and viability, but make competition less attractive than cooperation or adaptation. (2) Within a low-density institutional environment, strategically flexible PTROs are able to pursue strategies of niche-finding and complementing public rules to locate spaces where there is demand for regulation, avoid competition and thus promote organizational viability.

The effects of intrinsic organizational features and environmental conditions are cumulative. For IGOs, both sets of variables work in a negative direction, constraining the supply of innovative governance arrangements. For PTROs, in contrast, both work in a positive direction, facilitating supply.

A. Constraints on IGO governance

1. Intrinsic features: high entry costs and low flexibility

We argued that IGO have relatively high entry costs: institutional design decisions require agreement on difficult substantive and distributional issues by diverse member

states. The arduous processes to establish climate-related financial mechanisms under the UNFCCC and Kyoto Protocol provide apt illustrations. These processes may be particularly difficult because of their strong distributional element; on the other hand, they involve the creation of emanations by existing treaty bodies rather than wholly new institutions.

The Adaptation Fund (AF) grew out of the Kyoto Protocol (KP), which required that a share of proceeds from Clean Development Mechanism (CDM) projects (discussed below) be used to fund adaptation activities in vulnerable developing countries.[85] In 2001, the KP parties voted to create a fund for adaptation and directed 2% of CDM proceeds to it. The KP parties adopted basic elements of the AF in 2005 and 2006, shortly after the Protocol entered into force. In 2007, they established its governance structure, negotiating a complex system of Board representation with guaranteed seats for the UN regions, least developed countries, small island developing states and UNFCCC Annex I states; they also named a temporary secretariat and trustee. In 2008, the parties established the Adaptation Fund Board and adopted rules and procedures, revised in 2009. The Adaptation Fund approved its first project in 2010; as this is written it had disbursed only $92 million.[86]

An equally fraught process characterizes establishment of the Green Climate Fund (GCF), intended to become the main financial instrument of the UNFCCC.[87] The GCF was proposed at the 2009 Copenhagen Conference of the Parties (COP) to the UNFCCC and included in the Copenhagen Accord. The 2010 Cancun COP formalized the commitment to establish the GCF and established a Transitional Committee to design it. The Committee recommended some basic design elements, including a Board with multiple guaranteed seats like those on the Adaptation Fund Board; the 2011 Durban Conference of Parties adopted these recommendations.

However, Northern and Southern states were sharply divided over many aspects of the GCF design, and the governance structure approved at Durban was incomplete. Among the important unresolved issues were the GCF's relationship to the UNFCCC, mechanisms for capitalizing the Fund, the Fund's "business model" and operating modalities and the Board's own voting rules.[88] From 2012-14, the Board has made a series of decisions necessary to the initial mobilization of resources. As this is written,

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[85] AF Secretariat, Background of the Adaptation Fund, available at https://www.adaptation-fund.org/documents.

[86] The AF had, however, approved $226 million in grants. https://www.adaptation-fund.org/funded_projects/interactive. As of May 2014.

[87] See Lattanzio 2013.

[88] Schalatek and Nakhooda 2013.

however, no official contributions have yet been pledged and no decisions made on project funding.

2. Organizational strategy: fully occupying domains

We argued that IGOs, with broad organizational mandates, pursue strategies of domination or competition. Unable to cede any portion of their mandates, IGOs build out their activities to fully occupy their domains. This strategy is difficult to observe directly, but is reflected in diverse forms of organizational behavior.

One example is the widely noted phenomenon of "mission creep." Kahler argues, for example, that as issue areas are redefined (e.g., from environment to sustainable development) and new issues emerge, IGOs consistently expand their activities to encompass the new frontiers, even to the point of institutional overload.[89] Gutner agrees, arguing that this strategy, combined with the breadth and complexity of IGO mandates, undermines performance;[90] Einhorn argues that it impairs accountability.[91]

A second illustration is the phenomenon of "bandwagoning," in which IGOs and treaty bodies link themselves to the discourse and policies of salient regimes such as climate.[92] This expansionary strategy seeks to stake out portions of neighboring domains, both to gain resources (from niches with greater carrying capacity) and to ensure that an organization is fully occupying its own domain. For example, the Secretariat of the UN Convention to Combat Desertification (UNCCD) has "committed disproportionate attention to climate change in order to capitalize on the financial resources the climate regime has garnered."[93] Consistent with our theory, moreover, the UNFCCC opposed this maneuver, rebuffing UNCCD's efforts to create a joint work program.[94]

3. Nature of institutional environment: high density and competition

We argued that the strategy of occupying organizational domains tends to fill the available organizational space. This institutional density reduces adaptive opportunities by limiting the availability of favorable niches, restricting IGOs to continuing competition.

Like the UNCCD example, the behavior of the Rio Conventions provides evidence on institutional density and competition. These conventions, all signed in 1992, include

[89] Kahler 2009. Such expansion may result from state mandates rather than IGO agency.
[90] Gutner 2005.
[91] Einhorn 2001.
[92] Jinnah 2011.
[93] Conliffe 2011.
[94] Ibid., 47.

the UNFCCC, UN Convention on Biological Diversity and UN Convention to Combat Desertification. Like many environmental agreements, they have significant substantive overlap. For example, land conversion is a common catalyst for climate change, biodiversity loss and desertification; some sources of biodiversity are significant sources of greenhouse gases when destroyed. Accordingly, policy measures under one convention necessarily affect the others, sometimes negatively. For example, the CDM accepts credits generated by monoculture plantations—a clear threat to biodiversity. Conversely, properly designed forestry projects can both combat climate change and preserve biodiversity.[95] A similar level of institutional density can be observed in renewable energy (hydro, wind and solar) and other fields.

The Rio Conventions have recognized the existence of rule overlaps and the costs they create, but have taken few concrete actions to address them. In 2001, the three Secretariats created a "Joint Liaison Group" (JLG) to share information and coordinate efforts. One clear goal was to reduce costly competition and move toward resource-preserving cooperation: the decision "[u]rges Parties to take steps to harmonize policies and programmes…with a view to optimising policy coherence, synergies and efficiency in their implementation, at the national, regional and international levels."[96] Yet more than a decade later, the JLG is still focused on shallow forms of cooperation. Indeed, the Executive Secretary of UNFCCC recently argued that the JLG should *not* undertake concrete implementation activities or deal with international rules.[97] Its sole role, she argued, is to support Parties' activities at the national level. In short, the Conventions are pursuing only superficial forms of cooperation that leave in place incentives to compete, as UNCCD and UNFCCC have done.

B. Lesser constraints on PTRO governance

1. Intrinsic features: low entry costs

We argued that PTROs have relatively low entry costs: entrepreneurs are plentiful, they can rapidly establish new organizations at low cost and with little oversight, and they endow organizations with flexible mandates. As a result, PTROs follow an inherently faster-growth strategy that thrives in changing conditions.

Many climate PTROs provide striking illustrations of low entry costs. To take one example, in 2010 environmental NGOs (including the Natural Resources Defense Council [NRDC]) and socially responsible investor groups (including the CERES Investor Network on Climate Risk and California State Teachers Retirement System)

[95] http://www.cbd.int/doc/publications/cbd-ts-10.pdf.
[96] http://www.cbd.int/decision/cop/?id=7194
[97] http://www.cbd.int/doc/reports/jlg-11-report-en.pdf, p. 2.

established the non-profit Climate Bond Initiative (CBI).[98] CBI was created to develop standards for private sector "climate bonds," following the example of successful public bonds dedicated to supporting environmental projects. In 2011 – only a year later – CBI launched a prototype Climate Bond Standard focused on bonds backed by wind energy assets. This rapid entry is not unique: organizations such as CarbonFix and the Natural Forest Standard followed similar schedules.

The flexible governance of PTROs allows them to operate efficient, though still legitimate, design processes for standards and procedures. Individual and organizational entrepreneurs (such as NRDC and CERES), familiar with governance needs and niche opportunities, typically initiate these processes. The UN Environmental Program (UNEP) and other IGOs sometimes provide support, as UNEP did for the Global Reporting Initiative and Principles for Responsible Investment. Entrepreneurs convene expert technical advisory groups, organize stakeholder consultations and provide opportunities for public comment, typically online. These processes, and the resulting institutional designs, increasingly rely on learning from existing organizations.

2. Niche-Finding

Although the number of PTROs is growing rapidly, they are a relatively new organizational form. Abbott and Snidal show that before 1985, there were virtually no PTROs in social or environmental domains.[99] Similarly, Green shows that carbon PTROs did not emerge until 2000.[100] This low-density institutional space offers numerous niches in which strategically flexible PTROs can access abundant resources and limit costly competition (with notable exceptions), while advancing their substantive goals.

The Greenhouse Gas Protocol was created by two NGOs: the World Resources Institute and World Business Council on Sustainable Development, the latter business-based.[101] The organization's standard is a measurement tool that allows organizations to account for their carbon emissions. Different tools are required for different scales of emissions: for example, tools used for carbon-offset projects are distinct from those used to measure national-level emissions. The Greenhouse Gas Protocol (GHGP) was created for the "corporate level" of individual organizations.

The GHGP first published its standard in 2001. At that point, the Kyoto Protocol (KP) had just been signed, but had not yet entered into force. There was a smattering of national and private experiments with carbon markets, such as the UK Emissions Trading

[98] www.standards.climatebonds.net
[99] Abbott and Snidal 2009a.
[100] Green 2013.
[101] This discussion is drawn from Author

Scheme and Chicago Climate Exchange. In general, however, the organizational landscape was sparse, with few private initiatives and virtually none at the corporate level. UNEP was working on a corporate-level measurement tool, but its program had a slightly different audience and never gained traction.[102] Thus, GHGP entered an institutional environment where it could establish itself without worry of competition. By filling a recognized governance gap that UNEP had been unable to fill, moreover, it gained some benefits of complementarity. These conditions allowed it to gain political resources, avoid discord and establish itself as a credible and legitimate standard-setting organization.

Since then the Greenhouse Gas Protocol has enjoyed significant success. It is currently the most widely-used corporate-level accounting standard.[103] In 2012, 81% of Global 500 companies reported emissions using standards based on GHGP.[104] It is also the basis for several other carbon accounting frameworks, including that of the International Organization for Standardization (ISO-14064, Part 1). In short, the GHGP is *the* basis for corporate-level emissions accounting and reporting. Its staying power and high adoption rate evidence the success of its niche strategy.

The Verified Carbon Standard (VCS), which recently launched a new standard for REDD – reduced emissions from forest degradation and deforestation – followed a similar low-density logic. Although the UN and a number of private organizations have undertaken REDD activities, all have been project-based. There is an emerging consensus, however, that REDD activities are ideally undertaken across a jurisdiction, rather than as a discrete, geographically delimited projects. "Jurisdictional REDD" reduces the likelihood of "leakage" – simply pushing deforestation from within the project area to other locations. Recognizing the lack of appropriate rules and tools, the VCS is designed to help states and subnational actors implement jurisdictional REDD. VCS' entry strategy was explicitly to select a low-density domain.[105]

The Climate Bond Initiative, discussed above, complements private carbon offset standards by providing financing for offset projects. Yet CBI entered its own low-density niche; as a result there is virtually no overlap or competition among these standards. The recently created Natural Forest Standard,[106] in contrast, entered a niche crowded with private sustainable forestry schemes. Yet it was able to limit competition by narrowly defining its mission: it focuses only on projects that are designed for "REDD+," are

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[102] Ibid., 14.
[103] http://www.ghgprotocol.org/about-ghgp.
[104] https://www.cdproject.net/en-US/Pages/global500.aspx.
[105] http://v-c-s.org/news-events/news/groundbreaking-jurisdictional-redd-requirements-released.
[106] www.ecosystemcertification.org

relatively large, involve conservation and restoration of natural forests, and do not involve commercial forestry.

The Green-e Climate Certified Carbon Offset program similarly shaped its mission to avoid competition with private offset organizations.[107] The Green-e standard addresses retail sellers of voluntary offsets. It requires that the projects underlying retail offsets be certified by organizations such as the Gold Standard and VCS; it complements those standards by verifying that credits sold to consumers are retired from inventories and by regulating consumer advertising and disclosures. These cases illustrate the "conscious parallelism" that niche-finding produces.[108] They also reflect the ability of flexible, entrepreneurial organizations to adopt widely varying strategies within a particular issue area. This allows individual organizations to enter sparsely-populated niches, and enables PTROs as a group to diversify their activities in ways not available to IGOs.

Similar motivations sometimes lead PTROs to engage in cooperation. For example, since 2010, the Global Reporting Initiative and Carbon Disclosure Project have been working to align their disclosure standards. Other organizations exploring standards alignment include FSC and the Gold Standard; VCS and the Climate, Community and Biodiversity Alliance, both offset standards; and the 4C Association (coffee production standards) and Rainforest Alliance/Sustainable Agriculture Network (which are both introducing climate standards). In addition, the Gold Standard has acquired the private forest climate standard CarbonFix – a form of exit for CarbonFix and a means of entry for Gold Standard.

3. Complementarity

We argued that strategically flexible private transnational regulatory organizations (PTROs) can provide standards or services that complement the policies of IGOs and other public institutions. By entering complementary niches, PTROs gain authority, legitimacy, reputation and other resources, as well as some protection from costly competition. Again, our examples focus on the time of entry.

The Clean Development Mechanism (CDM) is the largest of three market-based mechanisms created by the KP. It allows developed nations to purchase carbon offsets produced from projects in the developing world to help achieve their emissions reductions commitments. The CDM thus creates a "compliance market" for offsets: the purchase of KP-monitored carbon credits advances developed countries toward their legally-binding reduction requirements.

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[107] www.green-e.org

[108] Abbott 2012.

After the CDM was in place, PTROs began creating their own carbon offset rules. Many are more stringent than CDM rules; in addition, many expand on the CDM through a "climate-*plus*" logic. The projects they certify produce emissions reductions, but also provide additional benefits: e.g., biodiversity preservation, local economic development or long-term sustainability.[109] Private offset rules and the private market they support thus complement public rules in terms of meeting – and exceeding – CDM goals. Moreover, PTRO standards have different targets. Whereas states use CDM to comply with their KP targets, most buyers of private offsets are business firms, which use them to enhance their reputations or prepare for future regulation.[110]

Not only do PTROs intend to complement the CDM; analysis of their rules reveals that they are in fact substantively complementary. A network analysis of public and private offset standards shows that, overwhelmingly, private standards choose to link to CDM rules: roughly 80% of all private transnational carbon offset standards recognize those rules.[111] Given the uncertain future of the Kyoto Protocol and carbon markets, PTROs are "hedging their bets" by ensuring maximal compatibility with other standards – including the dominant public standard, CDM. This compatibility increases the likelihood that a given private standard will continue to be usable in a future regulatory regime. In other words, creating complementary private rules helps reduce future switching costs. This strategy maximizes organizational autonomy, as standards need not compete directly with the CDM (though they do compete with each other). It also allows PTROs to maintain relevance – and thus survive – into the future.

Complementary PTRO standards also arise in climate finance. In the mid-1980s, the World Bank and European Investment Bank issued "Green Bonds" and "Climate Awareness Bonds," respectively. Those bonds included financial terms equivalent to commercial bonds and were (highly) rated on the same bases; however, proceeds were "ring-fenced" for use exclusively in environmental projects. As discussed above, in 2010 environmental NGOs and socially responsible investors created the Climate Bond Initiative (CBI).[112] CBI's standards for private sector "climate bonds" complement

[109] The extent to which private offset standards actually deliver these benefits is subject to debate.
[110] Peters-Stanley and Hamilton 2012.
[111] Green 2013.
[112] www.standards.climatebonds.net

public bonds and other forms of climate finance. CBI and voluntary offsets both involve the construction of new niches not previously identified as part of a governance domain.

In some areas, IGOs encourage PTROs to provide complementary standards. In 1997, UNEP – having long attempted to persuade businesses to report on their environmental impacts as a complement to treaty-based national reporting mechanisms – collaborated with the environmental NGO CERES to found and promote the Global Reporting Initiative (GRI). UNEP engaged in notable efforts to build the authority and legitimacy of GRI, including arranging its launch at the General Assembly, endorsing it and recruiting governments to host its headquarters. GRI is now an independent, multi-stakeholder institution, but a UNEP official sits on its board. Its standards for environmental reporting, which address carbon emissions and energy consumption among other behaviors, have become the global standard.

Finally, IGOs may afford PTROs opportunities to provide complementary services rather than standards. The 2002 World Summit on Sustainable Development (WSSD) encouraged public-private and private-private partnerships, not to adopt standards, but to develop operational projects that would further implementation of global norms, including the Rio Declaration and WSSD outcome. Nearly 350 of these so-called Type II partnerships have been registered. The 2012 United Nations Conference on Sustainable Development (Rio+20) similarly encouraged private "voluntary commitments" focused on implementation.

Conclusion: Implications for Governance

The types of organizations engaged in global governance have shifted dramatically in recent decades. Intergovernmental organizations (IGOs) and multilateral treaties, the dominant organizational forms since at least the end of World War II, remain numerous and influential, but their growth rates have slowed. Other organizational forms – from informal intergovernmental organizations to transgovernmental networks, public-private partnerships and private transnational regulatory organizations (PTROs) – have appeared and, in contrast to IGOs, expanded rapidly. This institutional revolution demands explanation.

Established actor-centric theories of politics shed substantial light on the ways in which organizational agency, strategies and power, subject to constraints, shape the

behavior of organizations in interaction with others. But these theories provide little insight into how *populations* of organizations *evolve* over time, as they confront constrained resources and potentially costly competition with other organizations and populations.

We have introduced organizational ecology theory, not previously applied to international relations, to fill this analytical gap. Organizational ecology focuses on populations: it explicitly addresses the abundance and diversity of organizational populations, their viability, and their life cycles of growth and decline. Organizational ecology emphasizes the process of selection, with new forms entering and succeeding, while other forms fail and exit. Selection is driven, in this framework, by intrinsic features of particular organizational forms, by the nature of the institutional environment – especially the conditions of competition – and by interactions among organizations in conditions of greater or lesser resource scarcity.

We find these two approaches highly (although not perfectly) complementary. Organizational ecology enhances our understanding of environmental constraints on organizational behavior and the interactions among organizations. Actor-centric theories, especially the analysis of purposive organizational strategies, supply the micro-foundations for understanding the behavior of populations.

To sharpen the argument we focused on two contrasting organizational forms: intergovernmental organizations (IGOs) and private transnational regulatory organizations (PTROs). Organizational ecology illuminates the differences between these two forms, one the slow-but-stable type, the other the rapid-but fragile type. Each possesses intrinsic features that influence its entry costs and natural growth rate, its vulnerability to changing conditions, its flexibility in the face of resource competition – and thus the organizational strategies it can pursue. In general, PTROs have lower entry costs and greater strategic flexibility than IGOs, enabling them to pursue strategies of niche-finding. The revolution in communications technologies has been especially conducive to the emergence of PTROs. In addition, each form enters and operates within a unique institutional ecology, shaped by the availability of resources, the distribution of power and capabilities, the legitimacy of particular governance approaches, the density of organizations and the conditions of competition. In general, PTROs face a lower-density environment than do IGOs, providing them wider opportunities. Together, organizational and ecological variables help determine whether and when new organizational forms such as PTROs appear in response to demand, and how viable they will be over time.

Because we have focused on two sharply divergent organizational forms, it is tempting to suggest that other current forms – such as informal and transgovernmental institutions – fall between those extremes. Transgovernmental networks, for example,

have lower entry costs and greater strategic flexibility than multilateral IGOs, although they are not as flexible as PTROs. Furthermore, their mandates are more fluid and flexible, and their principals exercise less formalized oversight. Beyond this tentative suggestion, however, we leave other applications to future research.

Our analysis suggests future trajectories for the two organizational forms we have considered, especially for private transnational regulatory organizations. If PTROs continue to be successful, we would expect their environment to change in line with the growth rate curve in Figure 1. Over time, as their numbers and the complexity of their activities increase, competition should intensify, and the number of available niches into which they can move should decline. In addition, major PTROs may increasingly invest in expanding and defending their "turf;" they too may well adopt strategies of fully occupying their domains and refusing to cede any portions of them, even to shift resources to new opportunities. Major PTROs may also become more highly bureaucratized, reducing their flexibility.

In a subsequent phase, therefore, PTROs could become organizational "dinosaurs," trapped in an organizational form adapted to the communications and information technologies of the early 21st century. Other forms of coordination, taking advantage of social media and requiring even less organizational overhead, could emerge and prove better adapted to current conditions.

If this were to happen, however, future analysts will still find it valuable to think, as organizational ecology does, in terms of entry costs and other intrinsic organizational features. They will still find concepts of institutional density, niches, resource availability, conditions of competition and other environmental conditions to be important. They will also look to the strategic flexibility of organizations, the strategies they pursue and the capabilities they possess. Organizational ecology does not give us answers, certainly not definitive answers, to questions of future organizational strategy and design; and it needs to be combined with more agent-centered, power-sensitive forms of analysis. The fact that it can be so combined, however, makes organizational ecology a particularly valuable addition to the international relations toolbox.

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