

Comparative Political Studies

<http://cps.sagepub.com/>

Research Frontiers in Comparative and International Environmental Politics: An Introduction

Xun Cao, Helen V. Milner, Aseem Prakash and Hugh Ward

Comparative Political Studies published online 27 December 2013

DOI: 10.1177/0010414013509567

The online version of this article can be found at:

<http://cps.sagepub.com/content/early/2013/12/27/0010414013509567>

Published by:



<http://www.sagepublications.com>

Additional services and information for *Comparative Political Studies* can be found at:

Email Alerts: <http://cps.sagepub.com/cgi/alerts>

Subscriptions: <http://cps.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [OnlineFirst Version of Record](#) - Dec 27, 2013

[What is This?](#)

Research Frontiers in Comparative and International Environmental Politics: An Introduction

Comparative Political Studies

201X, Vol XX(X) 1–18

© The Author(s) 2013

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0010414013509567

cps.sagepub.com



**Xun Cao¹, Helen V. Milner², Aseem Prakash³,
and Hugh Ward⁴**

Abstract

Given the recognition of the seriousness of climate change and other forms of environmental challenges, a growing number of political scientists are working in the environmental area. We have a substantial body of research examining local, regional, and global environmental issues. It is our sense that time is ripe for the field of international and comparative environmental politics to reflect on existing work, integrate it, and clearly articulate directions for future research. This special issue seeks to encourage scholars to systemically examine the roles of domestic and international factors, either alone or in interaction, to develop more nuanced models of environmental politics across space and time. We hope that the papers here will help to define the research frontier for the environmental politics field. Collectively, they exemplify recent efforts in comparative and international environmental politics that are, first, explanatory in orientation; second, cross levels of analysis in a way that transcends artificial subdisciplinary distinctions; and finally, are based on application of a variety of research

¹Penn State University, University Park, USA

²Princeton University, NJ, USA

³University of Washington, Seattle, USA

⁴University of Essex, Colchester, UK

Corresponding Author:

Xun Cao, Department of Political Science, Penn State University, 206 Pond Lab, University Park, PA 16802, USA.

Email: xuc11@psu.edu

methods and modeling techniques standard among the wider political science community.

Keywords

environmental politics, international relations, comparative politics

Environmental politics has now come of age as a focus for the political science community. While since the 1980s, senior scholars such as Robert Keohane, Elinor Ostrom, and Oran Young have written extensively on environmental problems, the confluence of institutional recognition, scholarly accomplishments, and pedagogical advances has occurred in the past decade or so. Specifically, we can point to a number of events that exemplify these changes: (a) the emergence and consolidation of specialist journals such as *Environmental Politics* and *Global Environmental Politics*, (b) major university presses such as the MIT Press have prestigious book series on environmental issues, (c) publication of an increasing number of major textbooks (Carter, 2007; Clapp & Dauvergne, 2005; Dryzek, 2005; Mitchell, 2010; O'Neill, 2009), and (d) Elinor Ostrom, a political scientist with an explicit environmental focus, was awarded the Nobel Prize in Economic Sciences in 2009. Yet, it is rare to find major political science journals publishing papers on domestic or international environmental politics. Given the recognition of the seriousness of policy problems, such as climate change and other forms of environmental degradation, as well as the growing number of political scientists working in the environmental area, we think time is ripe for the field of international and comparative environmental politics to think about the directions for future research. We hope that the papers in this special issue help to define the research frontier for the field. Collectively, they exemplify recent efforts in comparative and international environmental politics that are, first, explanatory in orientation; second, cross levels of analysis in a way that transcends artificial sub-disciplinary distinctions (Keohane & Milner, 1996); and finally, are based on application of a variety of research methods and modeling techniques standard among the wider political science community but less commonly applied in this field.¹

Explanations

Given the pressing nature of environmental issues, it should not be surprising that students of environmental politics are motivated by questions such as why more progress is made on some environmental problems rather than others,² why some governments have more effective environmental policies, and

why some states take on and meet international obligations while others do not. What a good explanation requires is contested, but at a minimum, it seems to us that it has to involve, first, showing that some factors are at least probabilistically associated with an observable pattern and, second, giving a theoretical account of why those factors affect what we observe. As Steinberg and VanDeveer (2012) have argued, the environmental politics literature has largely focused on descriptive case studies of particular countries and policies, as well as various international environmental regimes. The task of description is crucially important to any science (Gerring, 2012): It is the reason we come to pose the question of what explains variance. Yet, we are at the stage at which we need to place more emphasis on explanation. The papers in this special issue of *Comparative Political Studies* aim to illustrate how this agenda is being pursued at the forefront of the literature.

Compared with other subfields of political science, the environmental politics literature is relatively lacking in clearly articulated, parsimonious, and widely applicable theory. In recent years, however, a growing number of research projects aim at tackling various important research questions in environmental politics while paying particular attention to underlying causal mechanisms and model assumptions. The papers included in this special issue can be considered part of this recent development.³ For instance, recent political economy studies on the environment recognize domestic institutions as important drivers of environmental policy outputs and outcomes. The focus has frequently been on the democracy-no-democracy dichotomy. While some see strong theoretical grounds for suggesting that democracies will perform better, typically linked to greater freedom for citizens to articulate demands and greater responsiveness of democratic leaders (Binder & Neumayer, 2005; Fredriksson, Neumayer, Damania, & Gates, 2005; Payne, 1995), the empirical evidence is much more mixed (Li & Reuveny, 2006; Ward, 2008; Cao & Ward, in press). The theoretical arguments favoring democracy rely heavily on the assumption that a majority of citizens prioritize environmental cleanup, despite possible opportunity costs. Data on variation in public demand for environmental cleanup across nations and through time is sparse and relatively un-nuanced (Kvaløy, Finseraas, & Listhaug, 2012; - Ward, 2008). In this special issue, drawing on game-theoretic models of international cooperation to frame research questions about public opinion, Tingley and Tomz (2013) show that there may be specific questions useful for the analysis of variation of opinion over important issues for quite a large number of countries. Even if, as in the United States, a majority see a global issue such as climate change as a serious one, Tingley and Tomz demonstrate that this may not translate into support for the policies toward other states and international institutions that are functional for solving global

problems, suggesting that we need to know more and to ask deeper questions about citizen demand.⁴ An important focus for future research should be on comparative work on public opinion across a large number of countries through time.⁵ Moreover, this research should go beyond a focus on awareness and concern to ask questions about whether respondents' views are conditional on what other countries are doing and on costs of action that vary with this, related to issues such as trade competitiveness and economies of scale in dealing with problems.

The literature on democracy, autocracy, and environmental quality sometimes also gestures at other democratic processes beside the ballot box, for instance, when it alludes to the human rights records of democracies, which allow critical media comment and group action (Barrett & Graddy, 2000), and to the interest group process (Binder & Neumayer, 2005), which may be useful to the environmental movement if there is enough political competition for office (Fredriksson et al., 2005). However, the literature is only just beginning to show that these processes are actually causally efficacious. Portney and Berry (2013) in this volume are pioneering in this regard. They show that in the United States, city administrators' commitment to making their cities sustainable correlates with whether environmental groups are included in the policymaking process, which strongly suggests the causal lobbying mechanism at work.⁶ We suggest that the considerable body of case study literature on citizen involvement and pressure group processes needs to be supplemented by such large-*n* research that enables other factors to be controlled for in a way that is difficult using process tracing.⁷

Following in the wake of the institutional turn in political science, the literature has also started to examine variation within democracies with regard to institutional factors such as proportional versus majoritarian electoral rules, presidentialism versus parliamentarianism, and corporatism. Several authors connect these formal institutions to environmental policy outputs and outcomes (e.g., Fredriksson & Millimet, 2004; Fredriksson & Wollscheid, 2007; Scruggs, 2003). Recent working papers have also moved beyond the general differences between electoral systems and delve into other dimensions of electoral institutions, such as the effect of malapportionment on gasoline taxes (Broz & Maliniak, 2011) and that of electoral threshold on energy efficiency (Lipscy, 2011). Moreover, Scruggs's (2003) research on the relationship between corporatism and environmental performances helps us better understand the differences between Organisation for Economic Co-Operation and Development (OECD) countries. Whether current work on domestic institutions generalizes beyond the context of OECD countries helping to explain relative environmental performances in regions such as Latin America and East Asia is largely an open question, but one that it is

very important to pursue.⁸ In addition, to date, little attention has been paid in the environmental literature to variation between different sorts of authoritarian system, although this has become an important theme in the comparative politics literature (Gandhi, 2008; Geddes, 2006; Wright, 2008).

There are considerable differences between autocratic regimes that fail to be captured by standard indices such as the 21-point Polity autocracy/democracy scale or Freedom House index. Recent work on authoritarian systems distinguishes between single-party, military, monarchical, and personalist regimes (Geddes, 1999), and points to the correlation between these types and phenomena such as regime survival (Geddes, 1999), democratic transition and consolidation (Svolic, 2008), economic development (Gandhi, 2008; Wright, 2008), and initiation of conflicts (Pickering & Kisangani, 2010; Weeks, 2012). In this volume, Ward, Cao, and Mukherjee (in press) note that authoritarian regimes also vary greatly in state capacity. Whereas state capacity has commonly been considered to foster delivery of a cleaner environment in rich, democratic countries,⁹ this may not be so in autocracies where a ruler's priorities ensure that capacity is used to promote rapid economic development, even if this goes alongside some enhancement of environmental regulation. Assuming that infrastructural public goods typically damage the environment, Ward et al. (in press) show that with higher state capacity, rulers in authoritarian states are able to increase infrastructural investment and environmental protection; but the former increases at a faster rate, which enlarges the gap between the two, causing further environmental damage because added environmental protection efforts cannot compensate the negative effects associated with rulers' infrastructure investments. The policy implications here are pessimistic. For instance, because of leaders' priorities, high capacity systems such as China may have particular problems with achieving sustainability.

In addition to recent interests in the roles played by domestic factors such as public opinion and institutional characteristics across regime types, recent research also focuses on the transnational dimension of environmental politics. For instance, efforts have been made to address questions such as how various connections between countries, with or without mediating domestic conditions, affect the adoption of domestic policy instruments and commitment to international treaties (Bernauer, Kalbhenn, Koubi, & Spilker, 2010; Ward & Cao, 2012).¹⁰ Connections and interdependences at the international level could be functions of proximity in geography or various networks some of which might not be operating at the level of trans-governmental interactions. In this volume, Paterson, Hoffman, Betsill, and Bernstein (2013) use social network theory to map the emergence of the idea of carbon emissions trading, demonstrating the importance of interactions that would be off our

radar screens if we focused on interstate interaction. They show that the idea of carbon emissions trading did not diffuse through intergovernmental networks under U.S. pressure, as some previous accounts contend, but through relatively distinct clusters of experts in the United States and Europe. Although the authors trace some connections between these clusters, they argue that they were relatively distinct and led to distinct versions of emissions trading being adopted at a number of geographical scales, through regional, national, and international connections. The messages for the theory of international policy diffusion are that it is important not to assume that a single process is at work, to acknowledge that the diffusion of ideas may not primarily occur between nations states, and that the governance structures that emerge may be “polycentric,” that is, neither based on a single policy discourse nor a single unified structure.¹¹

Crossing Levels of Analysis

Explanation across levels of analysis is the second focus of papers in this special issue. It is commonly acknowledged that solving global environmental problems requires local solutions. Yet, local action is often limited and ineffective unless there is international coordination, so that communities are assured that their actions will not just be a futile gesture. Although the comparative method has been used on many occasions in the literature, it is less common to see it applied over more than one level of analysis—particularly across the traditional disciplinary division between domestic politics and international relations.¹² Fortunately, thanks to recent research efforts, the traditional divisions between international relations and domestic politics have begun to erode in the environmental field. For instance, work is emerging on the relative importance of domestic and international factors for signing environmental treaties (Bernauer et al., 2010), for environmental policy diffusion across international borders (Holzinger, Knill, & Sommerer, 2008), and for the ways that political institutions mediate the effects of trade competition on domestic environmental regulations (Cao & Prakash, 2012).

Increasingly, scholars look beyond a simple dichotomy between the international and domestic levels to theorize other sorts of interaction where organizations and groups in global civil society are involved. In this volume, Prakash and Potoski (2013) consider the effect of environmental management standards generated by the International Standards Organization (ISO). They show that the effect of the number of corporations abiding by the ISO14001 standard on environmental quality is conditional on the stringency of domestic law, with significant effects only when domestic regulation is relatively lax. The interactions between levels of analysis here are quite

complex, spanning the ISO (a body whose members are national standards bodies, many of which are not state-run), corporations, and national policy. Firms have a number of reasons for joining ISO environmental management schemes including developing a good corporate image with customers. In highly regulated states, the marginal cost of increasing environmental performance is relatively high as firms are already likely to have adopted practices influenced by national standards. Therefore, adopting ISO 14001 standards has less effect than it would on a firm in a less regulated context.¹³

The international and national levels are not the only ones to bridge, though. The field of environmental politics is populated not only by nations and their governments but by groups in global civil society, cities, and other locales. For instance, nonstate actors such as local communities, firms, advocacy coalitions, and epistemic communities are important players in local, regional, national, and global environmental politics (Haas, 1990; Ostrom, 1990; Prakash, 2000; Sabatier & Jenkins-Smith, 1993). In this special issue, Andonova considers transnational partnerships between state and nonstate actors, which are now of considerable importance to global environmental governance. Here, the interactions between states and global civil society are often conditioned by domestic factors. For instance, empirical findings from Andonova (in press) suggest that states are more likely to enter such partnerships if the domestic green lobby is more powerful. An important theme of Paterson et al. (2013) also concerns interaction cross levels of analysis, that is, networks that connect individuals simultaneously link clusters engaged in policy entrepreneurship at domestic and international level. Discussing directions for future research, they also highlight the importance of local political and economic forces, in interactions with transnational networks, in shaping the form of emission trading markets.

Indeed, the environmental politics literature has long recognized the fact that actors at different levels interact in complex ways so that environmental governance is not just a matter for states (Conca & Lipschutz, 1993). Other papers of this special issue also reinforce this cross-level analysis focus. For instance, Tingley and Tomz (2013) conduct online surveys of U.S. citizens' support for international policies that their government might adopt. Portney and Berry (2013) analyze city-level sustainable commitments in the American context by looking at the role of environmental groups. Harrison and Kostka (2013) study the implementation of climate change policy in India and China at subnational level, using a research design that strongly suggests the importance of informal coalition building at local level. They argue that the implementation of climate change policies in developing countries is far from being straightforward as it requires careful balancing of competing priorities to bring different interest groups on board. The central governments in China

and India have chosen different strategies as a function of competing priorities and differing state capacity. Subnational actors,¹⁴ under the shadow of national strategies and policy framework, need to build the support base for climate change policies through processes that they describe as the bundling of policies and interests.

Mixed Research Methods and Modeling Techniques

The papers in the special issue also represent a mixture of a variety of research methods and modeling techniques standard among the wider political science community. We think that such a mixed method approach and a useful dialogue among scholars of different research traditions are beneficial to the development of the field. Indeed, there are many fine studies dating back to the 1990s, if not earlier, that take this path: Ostrom (1990) pioneered the use of case studies with formal modeling; Haas, Keohane, and Levy (1993) and Young, King, and Schroeder (2008) made use of small-*n* comparative methods to study international environmental regimes and institutions; Scruggs (2003) pioneered a comparative political economy approach based on statistical inference across countries; Miles et al. (2001) used a multimethod approach to environmental regime effectiveness based on process tracing, small-*n* comparison across cases, and statistical analysis. We show how a number of other questions of approach and method now arise along this pathway.

Papers in this volume highlight the value of using idioms of explanation commonly used in other subfields that have been relatively infrequently used in relation to environmental politics. For instance, there has been increasing interest in network theories and analysis over recent years among political scientists and scholars of international relations,¹⁵ but it has not been applied very frequently in the environmental field despite much informal talk about networks.¹⁶ The network approach often comprises a set of theories about how the nature of networks conditions interactions of network actors and a set of methods for analyzing social relations. In this volume, Paterson et al. (2013) use social network analysis to demonstrate the emergence of the idea of carbon emissions trading in the United States and the European Union. Network data and analysis (e.g., visualization) help to reveal important patterns of interactions in the diffusion of emission trading ideas that would be missing if we solely focused on state behaviors at the country level.

Moreover, with the emergence of comparative political economy, we have seen the extensive use of formal models to suggest empirical specifications and to provide accounts of causal mechanisms at works. While the environmental economics literature is replete with papers based on formal modeling,

there is much scope in our view for application of formal methods in comparative environmental political economy. Although game theory has been used quite extensively to model interactions between states when there are environmental spillovers (Barrett 2003), much less use has been made of formal models in accounts of domestic environmental political economy and in studies that attempt to bridge levels of analysis across the domestic/international divide. In this issue, Ward et al. (in press) use a dynamic optimization model to help understand authoritarian rulers' tradeoffs between investment in economic development and environmental regulation, and they go on to test hypotheses about the effect of extractive state capacity on environmental outcomes derived from this framework, confirming the theoretical expectation that higher state capacity in authoritarian states is associated with worse environmental outcomes. Although it focuses on how authoritarian leaders use state capacity, the sorts of problem with implementation highlighted by Harrison and Kostka (2013) are not modeled. While it is by no means inevitable that formal theory should abstract from this sort of empirical complexity, it is certainly significant that area specialists remind modelers of what they are leaving out. This seems particularly important in the environmental policy field precisely because the actors who populate rational choice models (typically states, governments, or parties) cannot get what they want without cooperating with other entities (firms, pressure groups, and communities).

The rigor and clarity about assumptions formal models bring can be important to authors drawing on existing work in the tradition. Tingley and Tomz's (2013) starting point is the idea from game-theoretical modeling of public goods problems and interaction of states over the global commons that important to stable cooperation is the deterrent threat that others will stop cooperating if you do not cooperate (Barrett, 2003). Note that for this threat to be credible when made by a democratic state, the population must be willing to back the policy. Tingley and Tomz consider evidence across 25 nations and carry out their own survey to see whether U.S. citizens are reciprocal cooperators. They find that citizens' support for increasing emissions if others do so to punish free riding, or "intrinsic reciprocity," is low. On the other hand, citizens are much more willing to see their governments adopting "extrinsic reciprocity," centered on using trade and other sanctions against nations that break treaty obligations. This paper is important not only because it is the first in the field to empirically assess public support for reciprocal cooperation but also because it bridges the domestic international divide in the literature, assessing the domestic basis for international action.

Many papers in this special issue use large-*n* research methods such as regression analysis and network data visualization. However, we recognize

the importance of qualitative studies, especially given the recent advancement in qualitative research methods.¹⁷ For instance, a comparative case study of Brazil and Russia in Andonova (in press) helps to illustrate the causal mechanisms for transnational public-private partnerships in environmental policy cooperation. Paterson et al. (2013) take advantage of information gathered from expert interviews to further increase the credibility of the diffusion mechanism revealed by social network analysis. Comparing two cases can prompt thinking about counterfactual in a way that aids theory development. Harrison and Kostka (2013) compare implementation of climate change policy in India and China. These cases are very dissimilar: China is an autocracy, and India is a democracy; both have flourishing market sectors and a significant state sector, but China's state industry is still a relatively powerful force; India and China share considerable state capacity to analyze and make policy, but India lacks China's ability to implement policy; China's goals in relation to climate change are more ambitious. Yet, despite these differences, in both systems, it is necessary to "bundle" climate change policies with others to build the coalitions at local level necessary to legitimate policy and to foster implementation. Because of other potentially relevant factors that cannot be controlled across these two dissimilar systems, hard causal inferences cannot be made here. Yet, this comparison is suggestive of the need for theory building to allow for the significance of coalitions at local level.

The papers in this volume were first presented at Conference on Research Frontiers in Comparative and International Environmental Politics at the Niehaus Center for Globalization and Governance, Princeton University in November 2011. We are very grateful to the Centre, and particularly to Helen Milner and Robert Keohane, for making this event possible. The call for proposals emphasized our interest in study of environmental politics combining international and comparative perspective. This conference sought to encourage scholars to systemically examine the roles of domestic and international factors alone or in interaction to develop more nuanced models of environmental politics across space and time. At the conference, what was noticeable was the ferment of ideas as people working on the politics of the environment from many different approaches and at many different levels of analysis came together. We believe that the conference helped to define the new research frontier for comparative and international environmental politics: explanatory in orientation, crossing levels of analysis in a way that transcended artificial subdisciplinary distinctions, and based on application of research techniques standard among the wider political science community. We believe that this new agenda is one that will help integrate the work of many scholars in the field and to move the study of environment politics more into

the mainstream, where it certainly belongs if political science is to contribute to solving the most pressing problems now facing humanity.

Authors' Note

The order of the authors of the introduction and that of guest editors of the special issue are alphabetical. The papers in this special issue were first presented in the Princeton Niehaus Center for Globalization and Governance Conference on Research Frontiers in Comparative and International Environmental Politics, November 2-3, 2011.

Acknowledgments

We want to thank all participants, especially the paper discussants of the Princeton conference: Erik Gartzke, Jessica Green, Jennifer Hadden, Erick Lachapelle, Richard Perkins, Kenneth Scheve, Lyle Scruggs, Detlef Sprinz, and Jana von Stein for their comments. Participants in the plenary roundtable, James Caporaso, Robert Keohane, David Vogel, and Hugh Ward, identified important ideas for future research in international and comparative environmental politics. We are indebted to James Caporaso for his help during the various stages of this project. *Comparative Political Studies* (CPS) reviewers offered helpful comments to improve the papers. We want to thank Kate Connolly, CPS managing editor, for her support to put together this special issue.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. International and comparative environmental politics is a research field too vast for us to review systematically in this introduction. Instead, we decided to focus our discussion on new research frontiers illustrated by the papers included in this special issue. For readers interested in literature review, see, for example, Lowe and Rudig (1986) and Steinberg and VanDeveer (2012).
2. Answering this question requires us to explain variation over cases (K. Harrison & Sundstrom, 2007; Mitchell, 2010; Prakash & Potoski, 2011).
3. We do not have the space to list all the projects that we know of that address similar research questions as those in the special issue. We choose to only point to a few projects here. For research projects on public opinion, see Bechtel and

- Scheve (2012) and Lachapelle, Borick, and Rabe (2012). For an application of network theory, see Cao and Prakash (2010) and Hadden (2011). For environmental decision making in the authoritarian states, see Bagozzi (2013).
4. Lowe and Rudig (1986) provide an excellent review of the early literature on popular environment demand. Interested readers might want to follow Inglehart's postmaterialist argument (Inglehart, 1995) and many studies that follow and/or confront his argument (e.g., Brechin, 1999; Franzen & Meyer, 2010; and Kvaløy et al., 2012).
 5. Cross-national surveys such as World and European Value Surveys, International Social Survey Program (ISSP), Euro barometer, and PEW center surveys often ask respondents environment-related questions. For example, one question in the European and World Value Surveys that gets at the environment quality and economic welfare tradeoff is "increase in taxes if used to prevent environmental pollution" (WVS, 2009).
 6. For recent work concerning the effects of green interest groups, see, for example, Binder and Neumayer (2005) and Bernauer, Böhmelt, and Koubi (in press).
 7. The literature on interest groups politics and international trade policies (Grossman & Helpman, 1994) might also be able to provide theoretical insights into research on interest groups and their influences in environmental politics. For recent research that borrows from such literature, see, for example, Aidt (1998) and Damania (2001) on environmental policies; Fredriksson, Vollebergh, and Dijkgraaf (2004) on energy policies and intensities; and Cheon and Urpelainen (2013) and Cao (2012) on renewable energy.
 8. For a recent study on environmental policies of the transitional economies, see Andonova, Mansfield, and Milner (2007) and Dolsak (2013). In this volume, Harrison and Kostka's comparative study of China and India shows that despite significant differences in formal institutions between the two countries, for example, democracy in India and a single-party regime in China, success in implementing policies depends to a large extent on informal coalition building at the local level, which is a function of many factors including skills and strategies of local agents. This seems to suggest that there are more to explore in addition to formal institutions in a developing country context.
 9. VanDeveer and Dabelko (2001), for example, emphasize the importance of state capacity building in meeting international commitment.
 10. There are enough theoretical priors to build on from the recent policy diffusion literature. For a recent review on policy diffusion, see Graham, Shipan, and Volden (2013).
 11. The growing importance of actors operating in global civil society raises issues in relation to whether democratic processes can spill beyond or even transcend national borders. Themes linked to democracy are also important to other papers in this volume. For instance, Andonova (in press) shows that countries that are more consolidated liberal democracies are more likely to engage in transnational partnerships for the environment, because such regimes are more likely to have established relationships of regular interface with societal organizations.

12. However, see Keohane and Ostrom (1995) and Keohane and Milner (1996).
13. In line with the requirements of corporate image, firms also concentrate more on highly publicly visible forms of pollution such as air pollution, so the effects of ISO stands are not significant for all pollutants. Given the public good nature of environmental protection, previous studies have also explored how levels of visibility associated with different environmental and climate change issues affect policy outputs and outcomes (Cao & Prakash, 2012; Mani & Mukand, 2007).
14. These are at the provincial level for China and city level for India.
15. See Ward, Stovel, and Sacks (2011) for a review of this emerging literature; also Hafner-Burton, Kahler, and Montgomery (2009) for network analysis and international relations.
16. However, see Ward (2006), Prakash and Potoski (2006), Hadden (2011), and Ward and Cao (2012).
17. See, for example, Bennett and Elman (2007) and Mahoney (2007).

References

- Aidt, T. S. (1998). Political internalization of economic externalities and environmental policy. *Journal of Public Economics*, 69, 1-16.
- Andonova, L. (in press). Boomerangs to partnerships? Explaining state participation in transnational partnerships for sustainability. *Comparative Political Studies*, 47.
- Andonova, L., Mansfield, E. D., & Milner, H. V. (2007). International trade and environmental policy in the post-communist world. *Comparative Political Studies*, 40, 782-807.
- Bagozzi, B. K. (2013). *Authoritarian strategies of environmental treaty participation*. Retrieved from <http://www.benjaminbagozzi.com/research.html>
- Barrett, S. (2003). *Environment and statecraft: The strategy of environmental treaty making*. Oxford, UK: Oxford University Press.
- Barrett, S., & Graddy, K. (2000). Freedom, growth and the environment. *Environment and Development Economics*, 5, 433-456.
- Bechtel, M., & Scheve, K. (2012, September). *Public support for global climate cooperation*. Paper prepared for presentation at the 2012 Meetings of the American Political Science Association. Retrieved from http://conferences.wcfia.harvard.edu/files/piep/files/climate_psupport_nov1912_v3.pdf
- Bennett, A., & Elman, C. (2007). Case study methods in the international relations subfield. *Comparative Political Studies*, 40, 170-195.
- Bernauer, T., Böhmelt, T., & Koubi, V. (in press). Civil society inclusion in global governance: Insights from climate politics. *European Journal of Political Research*.
- Bernauer, T., Kalbhenn, A., Koubi, V., & Spilker, G. (2010). A comparison of international and domestic sources of global governance dynamics. *British Journal of Political Science*, 40, 509-538.
- Binder, S., & Neumayer, E. (2005). Environmental pressure group strength and air pollution: An empirical analysis. *Ecological Economics*, 55, 527-538.

- Brechin, S. R. (1999). Objective problems, subjective values, and global environmentalism: Evaluating the post-materialist argument and challenging a new explanation. *Social Science Quarterly*, 80, 793-809.
- Broz, J. L., & Maliniak, D. (2011). *Malapportionment, gasoline taxes, and climate change* (Working Paper). Retrieved from http://dss.ucsd.edu/~jlbroz/pdf_folder/wip/broz_maliniak_03-18-11.pdf
- Cao, X. (2012). *An interest groups and partisan politics model for renewable energies* (Working Paper). Retrieved from http://www.personal.psu.edu/xuc11/blogs/x/home/draft_energy_september_2012.pdf
- Cao, X., & Prakash, A. (2010). Trade competition and domestic pollution: A panel study, 1980-2003. *International Organization*, 64, 481-503.
- Cao, X., & Prakash, A. (2012). Trade competition and environmental regulations: Domestic political constraints and issue visibility. *Journal of Politics*, 74, 66-82.
- Cao, X., & Ward, H. (in press). Winning coalition size, state capacity, and time Horizons: an application of modified selectorate theory to environmental public goods provision. *International Studies Quarterly*.
- Carter, N. (2007). *The politics of the environment: Ideas, activism and policy*. Oxford, UK: Oxford University Press.
- Cheon, A., & Urpelainen, J. (2013). How do competing special interests influence environmental policy? The case of renewable electricity in industrialized democracies, 1989-2007. *Political Studies*, 61, 874-897. doi : 10.1111/1467-9248.12006
- Clapp, J., & Dauvergne, P. (2005). *Paths to a green world: The political economy of the global environment*. Cambridge, MA: MIT Press.
- Conca, K., & Lipschutz, R. D. (1993). A tale of two forests. In K. Conca & R. D. Lipschutz (Eds.), *The state and social power in global environmental politics* (pp. 1-18). New York, NY: Columbia University Press.
- Damania, R. (2001). When the weak win: The role of investment in environmental lobbying. *Journal of Environmental Economics and Management*, 42, 1-22.
- Dolsak, N. (2013). Climate change policies in the transitional economies of Europe and Eurasia. *Voluntas*, 24, 382-402.
- Dryzek, J. S. (2005). *The politics of the earth: Environmental discourses* (2nd ed.). Oxford, UK: Oxford University Press.
- Franzen, A., & Meyer, R. (2010). Environmental attitudes in cross-national perspective: A multilevel analysis of the ISSP 1993 and 2000. *European Sociological Review*, 26, 219-234.
- Fredriksson, P. G., & Millimet, D. L. (2004). Comparative politics and environmental taxation. *Journal of Environmental Economics and Management*, 48, 705-722.
- Fredriksson, P. G., Neumayer, E., Damania, R., & Gates, S. (2005). Environmentalism, democracy, and pollution control. *Journal of Environmental Economics and Management*, 49, 343-365.
- Fredriksson, P. G., Vollebergh, H., & Dijkgraaf, E. (2004). Corruption and energy efficiency in OECD countries: Theory and evidence. *Journal of Environmental Economics and Management*, 47, 207-231.
- Fredriksson, P. G., & Wollscheid, J. R. (2007). Democratic institutions versus autocratic regimes: The case of environmental policy. *Public Choice*, 130, 381-393.

- Gandhi, J. (2008). *Political institutions under dictatorship*. New York, NY: Cambridge University Press.
- Geddes, B. (1999, September). *Authoritarian breakdown: Empirical test of a game-theoretic argument*. Paper prepared for presentation at the annual meeting of the American Political Science Association, Atlanta, GA.
- Geddes, B. (2006). Stages of development in authoritarian regimes. In V. Tismaneanu, M. M. Howard, & R. Sil (Eds.), *World order after leninism* (pp. 149-170). Seattle: University of Washington Press.
- Gerring, J. (2012). Mere description. *British Journal of Political Science*, 42, 721-746.
- Graham, E. R., Shipan, C. R., & Volden, C. (2013). The diffusion of policy diffusion research in political science. *British Journal of Political Science*, 43, 673-701.
- Grossman, G. M., & Helpman, E. (1994). Protection for sale. *American Economic Review*, 84, 833-850.
- Haas, P. M. (1990). *Saving the Mediterranean: The politics of international environmental cooperation*. New York, NY: Columbia University Press.
- Haas, P. M., Keohane, R. O., & Levy, M. A. (Eds.). (1993). *Institutions for the earth: Sources of effective environmental protection*. Cambridge, MA: MIT Press.
- Hadden, J. (2011, September). *Contagious contention: A network approach to collective action on climate change*. Working paper prepared for the Annual Convention of the American Political Science Association, Seattle, WA.
- Hafner-Burton, E. M., Kahler, M., & Montgomery, A. H. (2009). Network analysis for international relations. *International Organization*, 63, 559-592.
- Harrison, K., & Sundstrom, L. M. (2007). The comparative politics of climate change. *Global Environmental Politics*, 7, 1-18.
- Harrison, T., & Kostka, G. (2013). Balancing priorities, aligning interests: Developing mitigation capacity in China and India. *Comparative Political Studies*, 47. doi : 10.1177/0010414013509577
- Holzinger, K., Knill, C., & Sommerer, T. (2008). Environmental policy convergence: The impact of international harmonization, transnational communication, and regulatory competition. *International Organization*, 62, 553-587.
- Inglehart, R. (1995). Public support for environmental protection: Objective problems and subjective values in 43 societies. *PS: Political Science and Politics*, 28, 57-72.
- Keohane, R. O., & Milner, H. V. (Eds.). (1996). *Internationalization and domestic politics*. Cambridge, UK: Cambridge University Press.
- Keohane, R. O., & Ostrom, E. (Eds.). (1995). *Local commons and global interdependence: Heterogeneity and cooperation in two domains*. Thousand Oaks, CA: Sage.
- Kvaløy, B., Finseraas, H., & Listhaug, O. (2012). The publics' concern for global warming: A cross-national study of 47 countries. *Journal of Peace Research*, 49, 11-22.
- Lachapelle, E., Borick, C. P., & Rabe, B. G. (2012). Public attitudes toward climate science and climate policy in federal systems: Canada and the U.S. compared. *Review of Policy Research*, 29, 334-357.

- Li, Q., & Reuveny, R. (2006). Democracy and environmental degradation. *International Studies Quarterly*, 50, 935-956.
- Lipsky, P. (2011). *Efficiency clientelism* (Working Paper). Retrieved from <http://www.princeton.edu/~pcglobal/conferences/environment/papers/lipsky.pdf>
- Lowe, P. D., & Rudig, W. (1986). Political ecology and the social sciences: The state of the art. *British Journal of Political Science*, 16, 513-550.
- Mahoney, J. (2007). Qualitative methods and comparative politics. *Comparative Political Studies*, 40, 122-144.
- Mani, A., & Mukand, S. (2007). Democracy, visibility and public good provision. *Journal of Development Economics*, 83, 506-529.
- Miles, E. L., Andresen, S., Carlin, E. M., Skjærseth, J. B., Underdal, A., & Wettestad, J. (2001). *Environmental regime effectiveness: Confronting theory with evidence*. Cambridge, MA: MIT Press.
- Mitchell, R. B. (2010). *International politics and the environment*. Thousand Oaks, CA: Sage.
- O'Neil, K. (2009). *The environment and international relations*. Cambridge, UK: Cambridge University Press.
- Ostrom, E. (1990). *Governing the commons*. Cambridge, UK: Cambridge University Press.
- Paterson, M., Hoffman, M., Betsill, M., & Bernstein, S. (2013). The micro foundations of policy diffusion toward complex global governance: An analysis of the transnational carbon emission trading network. *Comparative Political Studies*, 47. doi : 10.1177/0010414013509575.
- Payne, R. (1995). Freedom and the environment. *Journal of Democracy*, 6, 41-55.
- Pickering, J., & Kisangani, E. F. (2010). Diversionary despots? Comparing autocracies' propensities to use and to benefit from military force. *American Journal of Political Science*, 54, 477-493.
- Portney, K. E., & Berry, J. M. (2013). Civil society and sustainable cities. *Comparative Political Studies*, 47. doi : 10.1177/0010414013509574
- Prakash, A. (2000). *Greening the firm: The politics of corporate environmentalism*. Cambridge, UK: Cambridge University Press.
- Prakash, A., & Potoski, M. (2006). Racing to the bottom: Globalization, environmental governance, and ISO 14001. *American Journal of Political Science*, 50, 347-361.
- Prakash, A., & Potoski, M. (2013). Global private regimes, domestic public law: ISO 14001 and pollution reduction. *Comparative Political Studies*, 47. doi : 10.1177/0010414013509573
- Sabatier, P., & Jenkins-Smith, H. (Eds.). (1993). *Policy change and learning: An advocacy coalition approach*. Boulder, CO: Westview Press.
- Scruggs, L. (2003). *Sustaining abundance: Environmental performance in industrial democracies*. Cambridge, UK: Cambridge University Press.
- Steinberg, P. F., & VanDeveer, S. D. (2012). Bridging archipelagos: Connections, comparative politics and environmental politics. In P. F. Steinberg & S. D. VanDeveer (Eds.), *Comparative environmental politics* (pp. 29-60). Cambridge, MA: MIT Press.

- Svolik, M. (2008). Authoritarian reversals and democratic consolidation. *American Political Science Review*, 102, 153-168.
- Tingley, D., & Tomz, M. (2013). Conditional cooperation and climate change. *Comparative Political Studies*, 47. doi : 10.1177/0010414013509571
- VanDeveer, S. D., & Dabelko, G. D. (2001). It's capacity, stupid: International assistance and national implementation. *Global Environmental Politics*, 1, 18-29.
- Ward, H. (2006). International linkages and environmental sustainability: The effectiveness of the regime and IGO networks. *Journal of Peace Research*, 43, 149-166.
- Ward, H. (2008). Liberal democracy and sustainability. *Environmental Politics*, 17, 386-409.
- Ward, H., & Cao, X. (2012). Domestic and international influences on green taxation. *Comparative Political Studies*, 45, 1075-1103.
- Ward, H., Cao, X., & Mukherjee, B. (in press). Capacity and the environmental investment gap in authoritarian states. *Comparative Political Studies*, 47.
- Ward, M. D., Stovel, K., & Sacks, A. (2011). Network analysis and political science. *Annual Review of Political Science*, 14, 245-264.
- Weeks, J. L. (2012). Strongmen and straw men: Authoritarian regimes and the initiation of international conflict. *American Political Science Review*, 106, 326-347.
- Wright, J. (2008). Do authoritarian institutions constrain? How legislatures affect economic growth and investment. *American Journal of Political Science*, 52, 322-343.
- WVS. (2009). *World Values Survey, 1981-2008, Official Aggregate v.20090901* (World Values Survey Association, Aggregate File Producer). Madrid, Spain: ASEP/JDS.
- Young, O., King, L. A., & Schroeder, H. (2008). *Institutions and environmental change*. Cambridge, MA: MIT Press.

Author Biographies

Xun Cao is an assistant professor at the Department of Political Science, Penn State University. He is also affiliated with the Penn State Institutes of Energy and the Environment (PSIEE). His research interests include international and comparative political economy, environmental and energy politics, network analysis, and spatial models.

Helen V. Milner is a B. C. Forbes professor of politics and international affairs at Princeton University and the director of the Niehaus Center for Globalization and Governance at Princeton's Woodrow Wilson School. She was the chair of the Department of Politics from 2005 to 2011. She has written extensively on issues related to international political economy, the connections between domestic politics and foreign policy, globalization and regionalism, and the relationship between democracy and trade policy.

Aseem Prakash is a professor of political science and the Walker Family professor for the College of Arts and Sciences. He is the founding, general editor of the

Cambridge University Press Series on Business and Public Policy, and the coeditor of *Journal of Policy Analysis and Management*. He studies international political economy, environmental issues, and NGO politics. Much of his work focuses on voluntary environmental programs. He has extended this work to study corporate social responsibility and voluntary regulation in the nonprofit sector. He is also examining issues pertaining to drivers of domestic pollution, NGO advocacy, and accountability and the influence of trade and foreign direct investment (FDI) networks on the cross-country diffusion of rules, standards, and norms.

Hugh Ward is a professor of political science in the Department of Government at the University of Essex. He is coeditor of the *British Journal of Political Science*. His main research interests have been formal modeling and, more recently, the application of formal modeling and social network analysis to international and comparative environmental political economy and to international conflict.