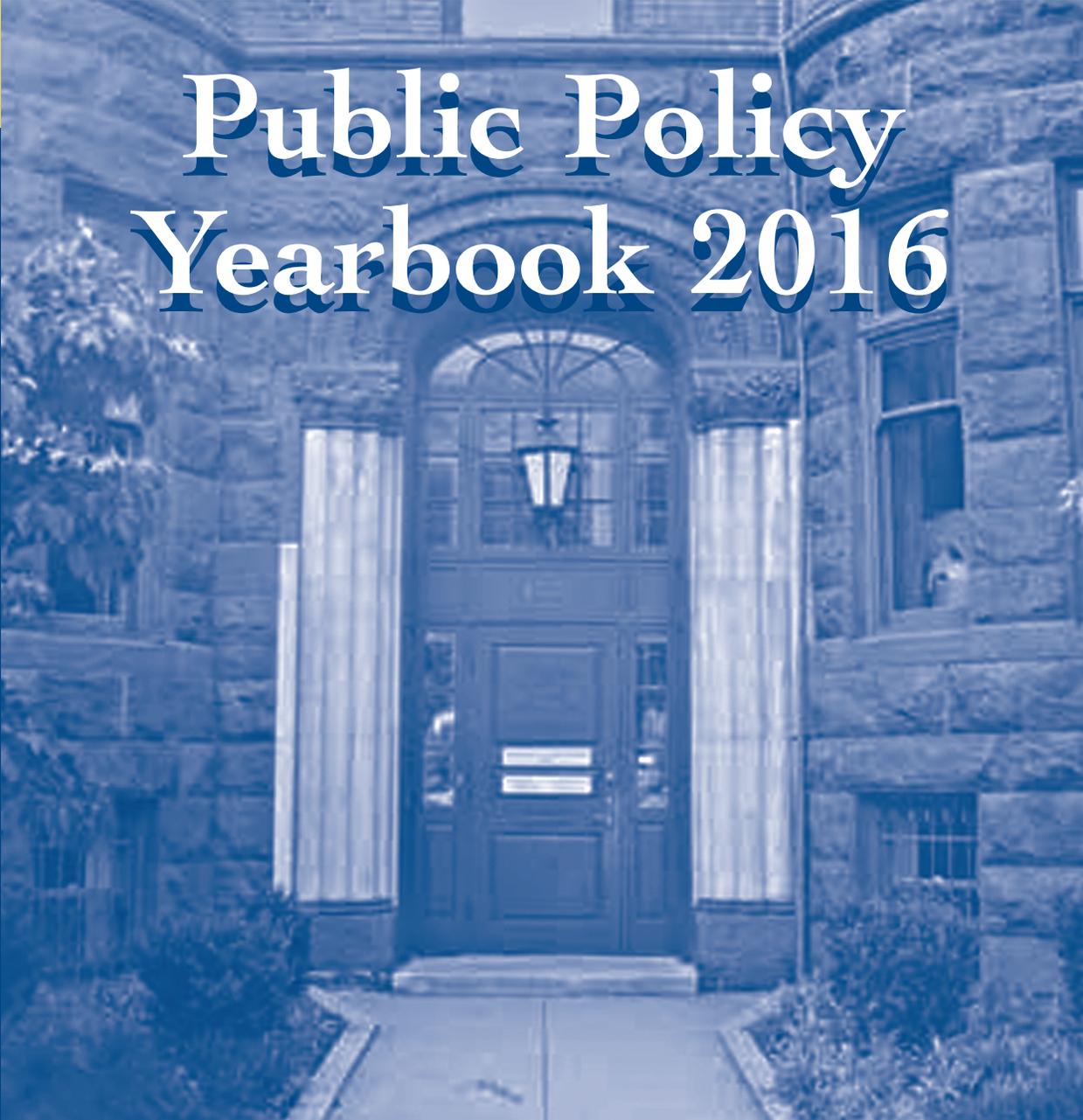


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The primary focus of the Policy Studies Journal (PSJ) is the study of public policy. Published on behalf of the Policy Studies Organization and the American Political Science Association's Public Policy Section, PSJ publishes individually submitted articles and symposia of exceptional quality by social scientists and other public policy researchers and leaders. The journal addresses a wide range of public policy issues at all levels of government, and welcomes a comparative approach. We accept a variety of manuscript types.

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The 2016 Public Policy Yearbook: Recent Trends in Public Policy Research

Sarah Trouset, Hank C. Jenkins-Smith, Nina Carlson, and Chris Weible

The articles presented in this supplemental issue mark the eighth edition of the *Policy Studies Journal's Public Policy Yearbook*. This issue includes four retrospective review articles summarizing recent developments in public policy research in four focus areas: defense and public policy, economic policy, environmental policy, and health policy. The issue also includes a set of special topic papers that discuss theories on the policy process, and publishing patterns found within public policy journals. We provide a brief description of these articles in greater detail below. You can also find the main content of the 2016 *Yearbook* online at: www.psjyearbook.com.

In addition to the annual publication of retrospective review articles in various policy subfields, a significant portion of our efforts with the *PSJ Yearbook* is providing avenues for readers to make connections with public policy scholars from around the world. The *Public Policy Yearbook* is an international listing of experts in various public policy domains, working on public policy problems all over the globe. Each year, we collect information from public policy scholars about their fields of study, research focus areas, published works, and contact information.¹ This information is then published as part of a directory of individual profiles on the *Yearbook's* website. The multidisciplinary nature of public policy research can make it challenging to identify the experts studying various policy problems, and the *Yearbook* provides users with an easier way to do so. Our intent is to provide a convenient tool for policy scholars to increase and broaden the visibility of their work, as well as to provide a means to network with other scholars. Using the website, readers can search for an expert through a range of search criteria options, which include: a scholar's first or last name, geographic location, institution, or primary research interests. By visiting the *Yearbook's* website, www.psjyearbook.com, users can access a free web-based interface to easily search for various policy scholars' contact information, as well as up-to-date summaries describing listed scholars' self-reported descriptions of current and future research ideas and projects.

In this introduction, we provide a brief snapshot of current developments in public policy research. We also briefly introduce the articles included in this supplemental issue. For more detailed information on the *Yearbook* website and 23

previously published retrospective review articles, we welcome readers to look at previously published editorial articles. In the 2013 and 2014 introductory articles (Jenkins-Smith, Trousset, & Weible, 2013; Trousset, Jenkins-Smith, & Weible, 2014), we presented a detailed description of the functionality of the *Yearbook* website, as well as a comparative look at developments in public policy research between 2009 and 2014. Last year, in the 2015 introductory article (Trousset, Jenkins-Smith, Carlson, & Weible, 2015), we presented a discussion on the progress of the *Yearbook's* published, peer-reviewed retrospective review articles dating back to the launch of the series in 2011. A updated version of those discussions is presented below, but we invite readers to look back at previous articles for more detail on how developments identified within the *Yearbook* have evolved over time.

Characteristics of *Yearbook* Participants and New Developments in Policy Scholarship

As we do each year, in Fall 2015 we reached out to the *Yearbook's* current listing of policy scholars, asking each member to update the information published on his or her profile.² This annual updating process allows us to verify the accuracy of listed scholars' contact information and to encourage members to list recently published articles and/or their research in progress. As is evident in Figure 1, our most recent update shows that the *Yearbook* continues to represent a broad cross-section of policy scholars from around the world; the 2016 *Yearbook* has 877 members, working in 48 different countries. Approximately 74 percent of *Yearbook* members work within the United States and the remaining 26 percent of members work in 47 countries around the globe.

The *Yearbook* is inclusive of scholars at a wide variety of institutions globally. Figure 2 shows the distribution of *Yearbook* members working across six continents. While the largest concentrations of *Yearbook* scholars are in North America and Europe, growing numbers are located in Asia, Latin America, Australia, and New Zealand, and Africa.

For those unfamiliar with the *Yearbook*, each year we use the self-reported content of *Yearbook* scholars' profiles to develop indicators for public policy scholars' evolving research agendas. The following discussion shows recent developments and patterns in the research foci of 877 scholars included in the 2016 *Yearbook*. We use several descriptive indicators that summarize and characterize scholars' evolving research agendas, including scholars' self-reported descriptions of their "current and future research expectations" and scholars' self-placement within 18 theoretical and substantive focus subfields of public policy.³

First, *Yearbook* scholars are asked to provide a paragraph describing their current and ongoing research agendas. When writing this paragraph, scholars may be as brief or as detailed as they choose. By scanning the content in the 2016 current research summary paragraphs, we can illustrate current trends among scholars' work by creating a word cloud populated by frequently used terms (see Figure 3). The word cloud provides a graphical representation of the aggregate foci of scholars' substantive and theoretical work, and provides us with a comparative perspective of

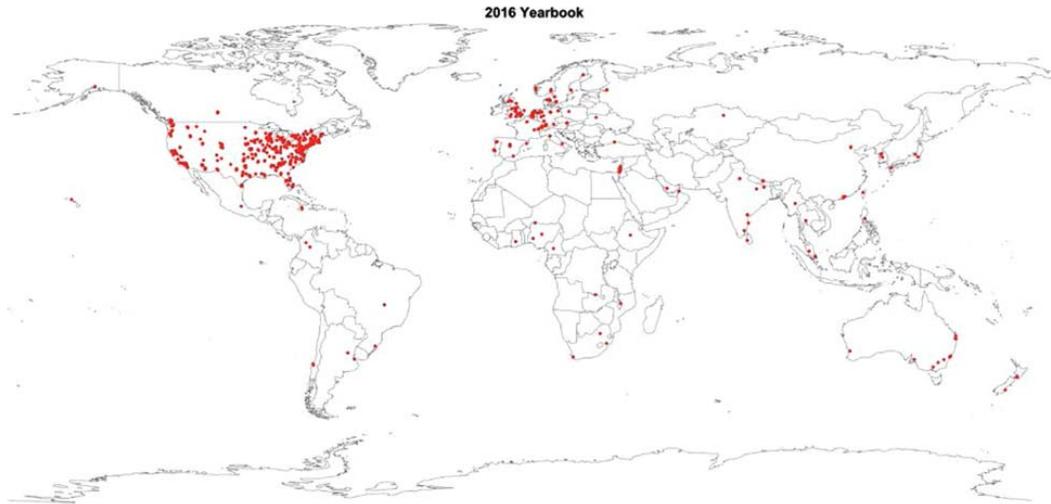


Figure 1. The *Yearbook's* Geographic Representation Spans 48 Different Countries.

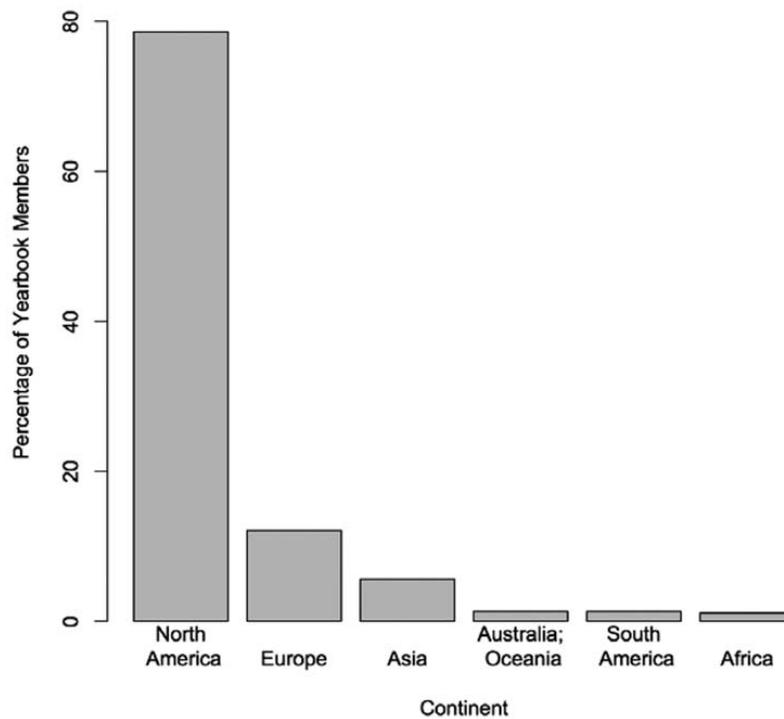


Figure 2. The *Yearbook's* Geographic Representation Spans Six Continents.

the evolution of research agendas. Figure 3 presents the 150 terms that appeared most frequently in the "Current and Future Research Expectations" section of scholars' profiles and any additional keyword tags that scholars supplied to describe their research agendas. In 2016, the prominent research interests, characterized by the 11 most frequently appearing terms, include the following: political, environmental, social, governance, management, education, university, development, science, analysis, and health.



Figure 3. The Relative Size of Each Term Denotes the Frequency With Which Key Terms Appear in Scholars' Listing of Their "Current and Future Research Expectations."

When comparing this word cloud with those from the past 6 years (Jenkins-Smith & Trousset 2010, 2011; Jenkins-Smith, Trousset, & Weible, 2012, 2013; Trousset et al., 2014, 2015), it appears that the proportion of research trends among *Yearbook* members has remained stable over time.

The trends identified within the "Current and Future Research Expectations" section of scholars' profiles are consistent with *Yearbook* members' self-identifications in the *Yearbook's* listed public policy focus areas. When scholars are asked to update the information listed on their profiles, they are presented with a list of 18 categories that represent a broad spectrum of subfields in public policy scholarship. They are first asked to check as many of the categories as they choose to describe their research agendas. In addition, for the last several years, we asked scholars to indicate which category best describes their primary theoretical focus area and which best describes their primary substantive focus area. The five theoretical focus areas include: agenda-setting, adoption, and implementation; policy analysis; policy history; policy process theory; and public opinion. The 13 substantive focus areas include: comparative public policy, defense and security policy, economic policy, education policy, energy and natural resource policy, environmental policy, governance, health policy,

international relations and policy, law and policy, science and technology policy, social policy, and urban public policy.

Figures 4 and 5 show the proportion of scholars indicating one of the theoretical and substantive specializations as their *primary* focus area. As shown in Figure 4, the most prominent theoretical focus area was policy analysis and evaluation. The second and third most common areas were policy process theory and agenda-setting, adoption, and implementation. As shown in Figure 5, across the substantive focus areas the largest proportion of scholars study issues in governance, environmental policy, and social policy. These were also the most prominent categories in 2014 and 2015.

Public Policy Research Retrospective Review Articles

In addition to the *Yearbook's* listing of experts in various public policy domains, each year we also publish a set of review papers that summarize recent developments in public policy research. We have included four new retrospective review articles in this special issue. These review articles offer readers quick access to recent developments in various policy subfields, because they can provide both a basic introduction and a coherent current perspective on the field to emerging scholars interested in understanding various policy problems. To write these review articles, each year we solicit recommendations for advanced graduate students working under the guidance of leading public policy scholars. This year, as part of this supplemental issue of the *Policy Studies Journal*, we are including second iteration review articles on the topic of research in economic policy, environmental policy, defense and public policy, and health policy. These articles contain key developments in the following areas:

Economic Policy. Komla Dzigbede (2016) focuses on three subdomains to characterize recently published research on American economic policy research. First, he discusses scholarly efforts to understand the influence of monetary and fiscal policy variables on outcomes such as employment and income. Second, he discusses research on the politics of regulation. Finally, he summarizes research examining how factors such as the media, interest groups, and lobbyists influence political attention and policy narratives in the policy process. To see the first iteration review article for Economic Policy, see Barry Pump's (2012) review.

Environmental Policy. Bridget Fahey and Sarah Pralle (2016) review recent research in the field of environmental policy. The research they identify examines a range of political factors that shape the context of policies concerning climate change, ecosystem management, and sustainable development. Recent writing on environmental policy has investigated questions about public participation, governance, and multi-level policy development and implementation. Fahey and Pralle also discuss how scholarly inquiries in environmental policy have employed multiple methods of analysis. To see the first iteration review article for Environmental Policy, see Meredith Niles and Mark Lubell's (2012) review.

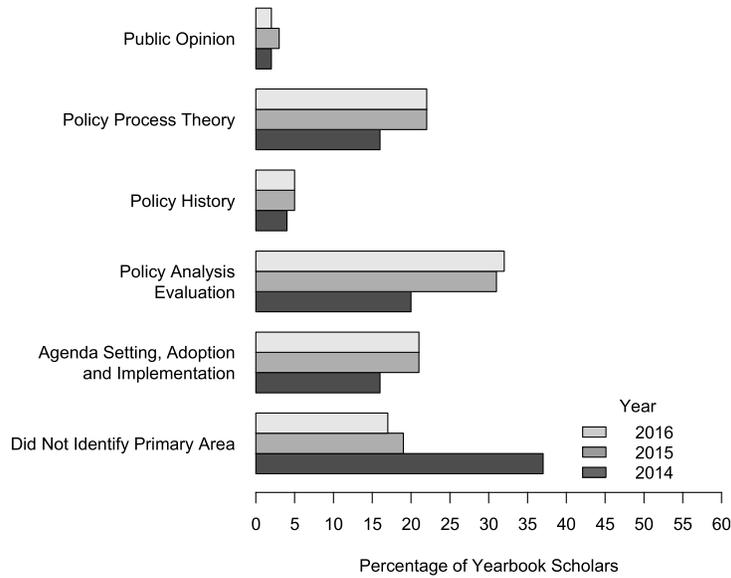


Figure 4. Scholars' Primary Theoretical Focus Area.

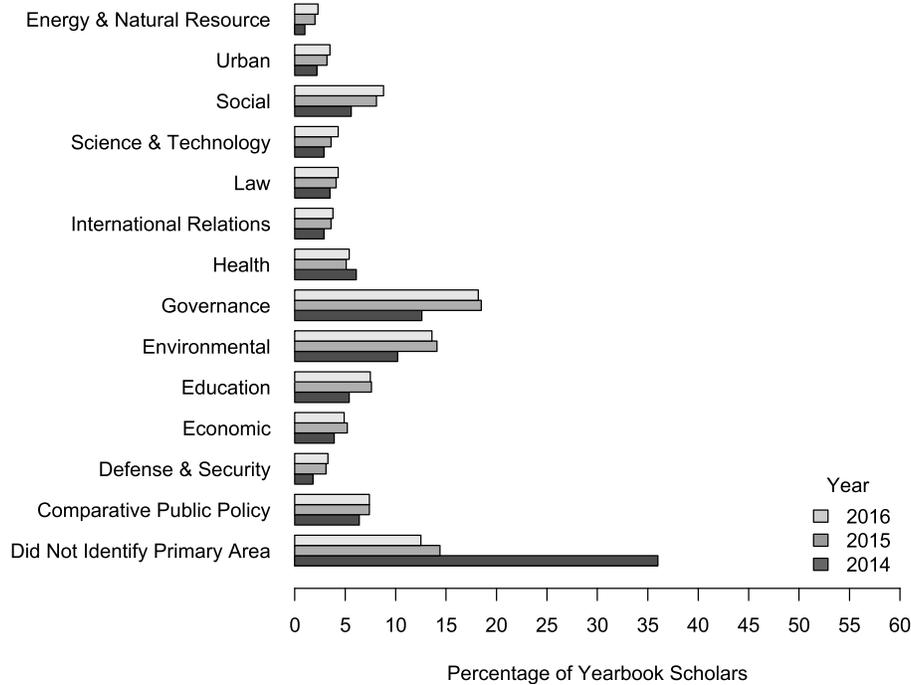


Figure 5. Scholars' Primary Substantive Focus Area.

Defense and Public Policy. Brandon Archuleta (2016) discusses the current state of defense and national security policy by examining recent research focused on the institutions and processes that structure U.S. policymaking. In his review, he summarizes published research by policy scholars, international relations scholars, diplomatic historians, and scholar-practioners. In doing so, Archuleta provides a multidisciplinary perspective of how scholars are examining national security policy.

This includes scholarship focusing on the influences of institutions (such as the National Security Council, bureaucracy, or industry) on national security policies. In addition, Archuleta summarizes research on defense and public policy at various stages of the policy process including: agenda-setting, policy formulation, and implementation. To see the first iteration review article for Defense and Public Policy, see Joseph Ripberger's (2011) review.

Health Policy. Lisa Frazier (2016) summarizes a range of research conducted by policy scholars investigating broader impacts in health policy. Frazier argues that recent scholarly inquiries are concentrated on topics including: health science (biomedicine and public health), health economics, health-care services, and health informatics. To see the first iteration review article for Health Policy, see Simon Haeder's (2012) review.

In addition, as with prior issues, we include a selection of articles that are of broad interest to public policy scholars that, for various reasons, may not readily find a home in traditional peer-reviewed journals. This year we include a paper on an important methodological tool for researchers undertaking text-based analyses within the Institutional Analysis and Development framework (Watkins & Westphal, 2016); a tongue-in cheek assessment of the frontiers in the construction of synthetic public policy frameworks and theories (Breunig, Koski, & Workman, 2016); and an innovative analysis of the networks of citations across journals that, collectively, provide the published basis for public policy scholarship (Adams, Infeld, Wikrent, & Cisse, 2016).

We hope that scholars continue to utilize these review articles as a quick way to update themselves on the current state of research within specific focus areas. We invite you to read previously published review articles, which can be found on the *Yearbook's* website or within previous volumes of the *PSJ*. We also encourage you to recommend outstanding graduate students to author future iterations of retrospective reviews.

Final Remarks

Our goal is to make the *Yearbook* a convenient and accessible tool for scholars, practitioners, students, or laypersons to find the right scholars, articles, and networks working on the full range of public policy questions. The *Yearbook* is intended to be a continuously updated resource for networking and collaboration among scholars, as well a no-cost platform for scholars to publicize their research accomplishments and active projects. The *Yearbook* is a valuable resource for students of public policy and public management who need to dig deeper into policy questions and seek ready access the current state of research in their policy domain of interest.

If you are interested in updating an existing profile or if you are not currently listed but are interested in becoming a member of the *Yearbook*, we have made several improvements to our system to ease the process of creating a profile. Scholars can access their profiles at any time and make direct changes to their listings. Users

can select from two different updating options by visiting the *Yearbook* website at: <http://www.psjyearbook.com/person/update>.

The first option is for scholars who already have a listed profile. On the webpage listed above, under the tab “Current Members,” scholars can submit the email address they currently have on file with the *Yearbook*. Our system will then immediately send a personalized link via email that the scholar can use to access their current profile information. By visiting that personalized link, scholars can submit changes to their profile listings and these changes will be updated on the *Yearbook* website immediately.

The second option is for policy scholars who do not yet have a listed profile, but who would like to become a member of the *Yearbook*. Scholars can list their profile at no charge. By visiting webpage listed above, scholars can click the tab labeled “Submit Your Information,” or can go directly to our easy-to-use form at: <http://psjyearbook.com/entry/addme>. Once scholars submit their profile information, our system will await approval by an editor to list that profile on the website.⁴ Once that initial profile has been approved, scholars can go back in and edit their profiles immediately, as described in the previous paragraph. If you have any questions about this process, we welcome you to contact us at: psjyearbook@gmail.com.

Although scholars are able to access their profiles at any time and make direct changes to their listings, we will continue running an annual fall recruitment and updating campaign. In the annual fall campaign we send invitations to both current and potential new policy scholars to update their entries in the *Yearbook*. We do this to ensure that the *Yearbook* content stays as up-to-date as possible. We will continue our efforts to include faculty from public policy and public management schools and departments across the globe, as well as reaching out to graduate students, post-docs, and practitioners in public policy that make up the next generation of leaders in public policy research and analysis. We ask that current members assist in this effort by forwarding our invitations to affiliate policy scholars, practitioners, and graduate students.

Finally, the production and operation of the *Yearbook* could not have been accomplished without the help of many hands. We would like to recognize Matthew Henderson for the design and implementation of the online website, web-tools, and data graphics. In addition, we thank Courtney Thornton for her help in editing *Yearbook* entries and review articles. Additionally, we are thankful for the support and help we receive from several individuals at the Policy Studies Organization and Wiley-Blackwell. Finally, we would like to thank Dr. Paul Rich, President of the Policy Studies Organization, for his financial support and encouragement for the *Yearbook*.

We hope that you will find the *Yearbook* to be a valuable resource in your work on public policy and hope you will continue to submit updates to your entries in the future.

Sarah Trousset
Hank C. Jenkins-Smith
Nina Carlson
Chris Weible
Yearbook Editors

Notes

1. *Yearbook* membership is free of charge and open to all policy scholars and practitioners worldwide. Since the *Yearbook's* inception in 2009, we have sought to broaden the participation of public policy scholars across disciplines, organizations, and nations. The challenge is that, given the nature of public policy research, the domain of public policy scholars and practitioners is highly varied. Public policy research is multidisciplinary in nature, and policy scholars and practitioners inhabit a wide range of institutional settings (universities, governmental agencies, research labs, nonprofit organizations, think tanks, and many others). Initially, our invitations were sent to the listed members of the Public Policy Section of the American Political Science Association, as well as members of the Policy Studies Organization. We worked with editors of public policy journals to reach policy scholars globally. More recently, we sent electronic and printed invitations to public policy and public administration departments across the United States and Europe, asking each department to forward the invitation to their public policy faculty members, graduate students, and affiliates. Last, our online member updating system allows for current and new members to offer contact information for colleagues and graduate students who should be included. We are currently seeking to expand the scope of invitations to include major practitioner and scholarly organizations focused on public policy, such as the Association for Policy Analysis and Management (APPAM). In all cases, we undertake an active recruitment and update effort in the fall of each year to be sure our content is up to date and as broadly inclusive as possible.
2. Although we undertake a systematic recruitment effort once a year, it is important to note that scholars can update their profiles or join the *Yearbook* at any time. The website allows scholars to easily access their profiles by submitting their email address on the website profile management portal. The *Yearbook's* website also allows for new members to join, at no cost, through the use of a short online form. This process is described in greater detail in first section of this introductory article.
3. When updating their profiles, scholars are asked to check off as many categories as are applicable to describe their research agendas.
4. This initial approval is necessary to avoid publishing "spam."

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Whither Are We Bound? New Insights on American Economic Policymaking

Komla D. Dzigbede

This article reviews recent scholarship in American economic policymaking. It focuses on scholarly work from 2012 to 2015 and considers three main streams of research. The first concerns how, amidst the lingering effects of the Great Recession, monetary and fiscal policy variables interplay to affect policy outcomes such as employment and income. The second stream relates to the politics of regulation and spans several aspects of regulatory governance such as enforcement and compliance, regulatory arbitrage in financial markets, and the role of U.S. regulatory regime structures as standards of best practice in global contexts. The third stream of research focuses on the dynamics of institutional relationships in the policy process and explores how policy narratives influence policy outcomes, how the media engages and alters political attention, and how interest groups and lobbyists shape policy decisions. The final section provides directions for future research and assesses the extent to which these frontier issues in economic research could shape American economic policymaking going forward.

KEY WORDS: economic policy, institutional dynamics, policy process, regulatory governance

Introduction

Recessions come and go but their effects may linger on and affect economic outcomes in subsequent years.¹ As the U.S. economy continues to grapple with the residual effects of the Great Recession, scholarship in American economic policymaking has moved beyond mere postmortem analyses of what caused the economic downturn (e.g., Stiglitz, 2010; Palley, 2011) and whether policy responses to the crisis were adequate or justified (e.g., Blinder & Zandi, 2010) to ex-ante discussions of the mix of policy responses that can contain present and future stresses in the economy (e.g., Dosi, Fagiolo, Napoletano, Roventini, & Treibich, 2015) and improve economic welfare. How monetary and fiscal policies should interact to moderate booms and busts in economic cycles over time has been at the forefront of scholarly discussions.

Regulatory governance is another area of renewed interest among researchers. Over the years, regulation in U.S. policymaking contexts has received both support and skepticism. Supporters of regulation have argued that tighter regulatory

schemes are required to correct the welfare costs of inefficiencies in the market system while skeptics have emphasized how regulatory schemes constrain the level of competition in the private sector and limit economic growth processes (Vocino, 2003). More recent research has been motivated by the failure of regulatory systems to effectively counter the range of systemic risks that culminated in the Great Recession. Scholars have explored the subject of regulatory governance from perspectives such as regulatory arbitrage (Kroszner & Strahan, 2011) and regulatory policy uncertainty (Nodari, 2014). Also, following the introduction of a range of regulatory initiatives during and after the Great Recession, questions remain on the extent to which emergent perspectives on regulatory governance in the United States serve as standards of best practice and shape regulatory reform approaches in other countries.

Much research exists on the role of institutions in the policy process. Different theories and frameworks have explained how institutions support incremental policymaking (Lindblom, 1959; Schulman, 1975), provide the venues for punctuated policy changes (Baumgartner & Jones, 1993), and determine the extent to which members of advocacy coalition groups can have access to policymaking venues and shape policymaking (Sabatier & Jenkins-Smith, 1988). Indeed, institutions are central to economic policymaking because they define the rules, norms, and strategies within which actors make routine policy choices and major constitutional decisions that affect policy outcomes (Cram, 2005; North, 1990; Ostrom, 2009). Recent research has built on the theoretical foundation of earlier scholars to investigate further the dynamics of institutional relationships in the policy process. Scholars have probed how policy narratives influence policy outcomes, how the media engages and alters political attention, and how interest groups and lobbyists shape policy decisions.

This article examines recent scholarship in American economic policymaking. It reviews research on monetary and fiscal policymaking, regulatory governance, and institutional dynamics in the policymaking process. Studies published in the years spanning 2012 and 2015 are the main focus of the article. References to earlier studies provide background and context to the discussion. I ask the following question: what new insights emerge from the current state of research on American economic policymaking, and how will these affect policymaking going forward? In the next sections, I examine research on how monetary-fiscal policy interactions affect economic outcomes, review studies on regulatory governance, discuss new insights on institutional dynamics in the policy process, and outline ways in which these new insights could shape American economic policymaking in the years ahead.

Monetary-Fiscal Interactions in Economic Policymaking

Renewed focus on the optimal combination of monetary and fiscal policies that promote economic welfare can be traced to perceived failure of economic policy to prevent the systemic risks that eventually led to the Great Recession. Scholars have noted that monetary and fiscal policies became more discretionary and less predictable in the years leading up to and during the recession. Monetary policymaking deviated from its rule-based path as the Federal Reserve held interest rates unusually low in the years preceding the Recession (Taylor, 2014). The Federal Reserve's

deviation from the monetary policy reaction function was in response to deflationary pressures in the economy. However, rather than bolster economic activity, the change in stance spurred severe risk-taking, resulted in a housing sector bust, and brought immense losses to financial institutions (Bordo & Landon-Lane, 2013) which depressed economic growth and employment further (Taylor, 2014). In the same vein, fiscal policy during the recession years served to provide a short-term boost to the economy, instead of promoting a sustained recovery consistent with the size of government spending in this period (Cogan, Cwik, Taylor, & Wieland, 2010).

Contemporary research on monetary-fiscal policy interaction has emphasized timing and sequencing as well as market agents' beliefs and expectations as essential elements that shape interactions between monetary and fiscal policies to influence economic welfare. In regard to timing and sequencing, the literature identifies three potential causes of conflict: first, monetary and fiscal authorities might each react strongly to a negative economic shock and the combined impact of their policies may be excessive, resulting in overheating of the economy; second, both authorities might delay their response to a shock in anticipation of the other authority reacting to the shock and this would deepen the economic contraction; and third, the timing mismatch between monetary austerity and fiscal stimulus might result in high rates of volatility in inflation and output thereby constraining welfare improvement (Libich & Nguyen, 2015). Judging from the contemporary literature, a desirable sequence for monetary-fiscal policy interactions is one that promotes fiscal leadership, wherein fiscal policy is determined before monetary policy to achieve both inflation conservatism and fiscal discipline (Adam & Billi, 2014), or a timing sequence that allows fiscal policy to accommodate and support changes in monetary policy over an extended time span (Bianchi & Ilut, 2014).

Market agents' beliefs and expectations determine whether monetary and fiscal policies can interact in a manner that results in economic welfare improvement. Agents' expectations tend to be less supportive of economic policy if monetary and fiscal authorities' interactions generate conflicts and cause suboptimal macroeconomic outcomes. Loss of credibility among market agents weakens the degree to which policies can be anchored in market expectations and sets off a vicious circle that worsens macroeconomic outcomes (Libich & Nguyen, 2015). Bianchi (2012) and Melosi and Bianchi (2013) tested the role of agents' beliefs across changing monetary-fiscal policy interaction regimes (active monetary policy combined with passive fiscal policy; active fiscal policy combined with passive monetary policy; and active monetary policy combined with passive fiscal policy) in the United States. Bianchi (2012) found that agents alter their expectations depending on the credibility of economic policymakers' responses over time—"decades of lack of fiscal discipline can easily discourage agents about the possibility of a prompt return to a virtuous regime, resulting in dramatic changes in the propagation of the shocks through the economy" (p. 172) Building transparency and accountability into monetary-fiscal interactions is one way policymakers can guide market agents to connect short-term policy responses with longer-term economic goals, stabilize agents' expectations, and enhance credibility of economic policy (Bernanke, 2014; Florio & Gobbi, 2015).

Under unconstrained conditions of timing and sequencing, and where policy credibility helps to anchor market expectations, an appropriate mix of monetary and fiscal policy is one that combines counter-cyclical fiscal policy with monetary policy targeting employment. This form of interaction between monetary and fiscal policy is appropriate for stabilizing the economy during times of economic distress, and its effects on stabilization become sharper as the level of income inequality increases (Dosi et al., 2015).

Additionally, central bank independence deepens policy credibility and improves economic outcomes. This traditional view of the role of central bank independence is widely accepted among economists and political scientists (Franzese, 1999) although more recent discussions of the subject (e.g., Fernandez-Albertos, 2015; Hanretty & Koop, 2012) emphasize the distinction between formal and actual independence and note how formal structures that do not translate into actual independence can alter the effectiveness of the monetary-fiscal policy mix.

Overall, the academic literature is in agreement that monetary or fiscal policy alone cannot generate the desired linkages in the economy to maximize welfare. On the monetary policy side, policymakers' ability to control interest rates is viewed among scholars as largely exaggerated (Thornton, 2014) and their policy responses in times of high unemployment and weak economic recovery have been regarded as markedly passive (Romer & Romer, 2013) with limited effects on welfare. At the fiscal policy front, recent evidence has shown that fiscal policy has lost, somewhat, its capacity to stimulate economic output (Pereira & Lopes, 2014), has only small impacts on consumption and investments (Peren Arin, Koray, & Spagnolo, 2015), and can only boost employment when it combines with monetary authorities to pursue a sustainable bond-financed deficit-reduction strategy (Yakita, 2014). Especially during epochs of severe economic disturbance, which might require unconventional monetary policy (Gertler & Karadi, 2011; Gertler & Kiyotaki, 2015) and nontrivial deviations from rule-based fiscal paths, the need for optimal combinations of monetary and fiscal policy to enhance employment and income conditions of citizens cannot be overemphasized.

Regulatory Governance

Scholars have noted how the failure of regulatory governance systems contributed to the propagation of systemic risks in financial markets, resulting in the Great Recession (Levine, 2012). In the aftermath of the recession, the regulatory governance landscape has witnessed a series of modifications aimed at correcting the ills of the past and averting future systemic stresses. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 increased the power of financial sector regulatory authorities with a view to deepening oversight and minimizing the gaps in regulation. Appropriately, recent studies have refocused on the theme of regulatory governance and explored a variety of topics, including enforcement and compliance, regulatory arbitrage, regulatory policy uncertainty, and global governance.

Enforcement of regulations is a critical element in regulatory governance as it allows for early detection and sanctioning of noncompliant behaviors in the

economic system (Etienne, 2015). Recent studies have described how political factors influence enforcement of regulations. Regulatory agencies, whether at the national or subnational government levels, yield to ideological preferences of their political principals and choose which statutes to implement depending on which party is in control of political institutions (Acs, 2015). Also, the greater the degree of independence of a regulatory agency, the more likely it is that appointment of agency leadership will favor individuals that hold the same ideological preferences as the appointing political principals (Enns-Jedenastik, 2015). Furthermore, politics remains a crucial factor in effective regulatory enforcement within and across different tiers of government (Gerber & Teske, 2000) as exemplified in state and local governments' resistance toward federal government regulations and unfunded mandates (Vocino, 2003).

Nevertheless, a threshold may exist beyond which sets of regulatory rules and their enforcement may yield suboptimal outcomes. An example is the Dodd Frank Act, which proposed many new rules—numbering more than two hundred—in addition to various directives for modifying existing regulations (Coates, 2015). Rule changes proposed in the Act created regulatory policy uncertainty among market agents and, as Nodari (2014) showed, such uncertainty (measured as a news-based index that mimics the reaction of credit spreads to regulatory shocks) can have negative impacts on the real economy.

Compliance, like enforcement, is an important element in regulatory effectiveness. Regulatory governance embraces a large and diverse audience that includes clientele groups, policy experts, and ordinary citizens. Therefore, regulatory effectiveness depends not only on regulatory agencies' enforcement of rules and procedures but also on audience members' (or market agents') behaviors toward agencies—these behaviors effectuate compliance and are a function of audiences' beliefs about whether agencies can perform tasks effectively (Carpenter, 2010).

A rich literature exists on the features of policy tools that motivate compliance. Schneider and Ingram (1990), for example, discuss how incentives (pay-offs in the form of inducements, charges, or sanctions), capacity-building instruments (information that enables individuals or groups to make decisions or undertake activities), and symbolic and hortatory tools (capitalize on people's beliefs and values or decision heuristics) all help to explain why target populations react the way they do to different (regulatory) policy initiatives. In state and local government bond market contexts, the discourse on compliance has focused on which types of information disclosure requirements—mandatory versus voluntary—are more effective in bolstering market agents' compliance with regulatory structures (Coffee, 1984; May, 2005). Recent evidence (e.g., Friewald, Jankowitsch, and Subrahmanyam, 2012) seems to favor voluntary disclosure arrangements.

Regulatory agencies are constantly challenged to keep governance apace with current trends as markets become increasingly complex and sophisticated financial instruments proliferate. Amidst these dynamic market conditions, regulatory arbitrage remains a potential danger—institutions might attempt to limit the burden of regulation by engaging in new forms of transactions that are in the “shadows” of regulatory oversight, “where risks may slowly accumulate like dead wood ready to

ignite the next wildfire” (Kroszner & Strahan, 2011, p. 243). Strengthening the microstructure of governance systems within stable macroeconomic environments will ensure that regulatory governance remains well functioning and relevant.

Discussions of how U.S. regulatory structures serve as standards of best practice in other countries are framed around notions of regulatory reform and policy diffusion. Modern regulatory reform began in the United States in the 1970s and, ever since, has stretched beyond its initial concentration on transportation and public utility sectors to a wider range of sectors and domains (e.g., financial services, health care, energy, environmental preservation, consumer protection, etc.) and across national boundaries to other developed nations and developing countries (Armstrong, Cowan, & Vickers, 1994). Diffusion of regulatory governance standards across national boundaries has varied greatly in the extent to which new international procedures are adopted and embedded within local structures due to tensions with administrative, institutional, and political conditions in adopting-country systems (Dubash & Morgan, 2012; Jordana, Levi-Faur, & i Marín, 2011; Thatcher, 2002).

Among developing countries, international financial institutions continue to exert enormous influence in adoption of best-practice standards (Dubash & Morgan, 2012). These international institutions often bundle reform recommendations with development assistance facilities. More research is needed to understand the extent to which regulatory reforms championed by international institutions, and conditioned on best-practice standards in the United States and other developed nations, fit developing country contexts and deliver desired economic outcomes. At any rate, Andrews (2012) has shown that the extent to which best practice fits, and is relevant to, an adopting country’s context determines the extent to which the practice is successful in fixing local regulatory lapses.

Institutional Dynamics in the Policy Process

Sabatier (2007) described the policy process as the manner in which myriad actors conceptualize and present problems needing solutions to government, and the ways in which governmental institutions formulate alternatives and select policy solutions that are implemented, evaluated, and revised. Institutional actors (e.g., the president, administrative agencies, legislatures at different tiers of government, and the courts) as well as noninstitutional actors (e.g., parties, interest groups, political consultants, think tanks, and the media) play key roles in the policy process (Cahn, 2013). Policy process theories have described different ways in which actors interact within defined institutional spaces to influence public-policy outcomes.

Within the institutional analysis and development (IAD) theoretic framework, institutions determine the incentives confronting individual actors and influence their behavior (Ostrom, 2009). Interactions among actors are at three levels: operational tier, where actors interact amidst available incentives to generate outcomes; policy tier, where decision makers repeatedly make policy decisions amidst constraints prescribed by collective choice rules to influence outcomes; and constitutional tier, where some actors define eligibility rules and make decisions regarding who can participate in policymaking. Since interactions among actors are governed

by well-defined rules and norms, the policymaking process generally favors preservation of the system, until some actors set out to change obsolete institutions and rules, with the goal of achieving improved policy outcomes (Petridou, 2014).

The punctuated equilibrium theory (PET) hypothesizes that political processes comprise long periods of stability but occasionally they produce large-scale deviations from past trends (True, Jones, & Baumgartner, 2007). The theory “centers on the collective allocation of attention to disparate aspects of the policy process and how shifts in attention can spawn large changes in policymaking” (Jones & Baumgartner, 2012, p. 17). Modest changes occur when noninstitutional actors (individuals and interest groups) discuss issues in subsystems (communities of experts) because parallel or simultaneous processing of many issues limits the extent to which a small set of issues can gain political attention at the macro-political level (Congress and the presidency). On the contrary, a major change occurs when an issue gains enough momentum in the subsystem, many actors from other institutional venues become involved in the issue, parallel processing of the issue at the subsystem level breaks down, and the issue gains attention of serial decision-making actors at macro-political institutions (Schlager, 2007). Thus, institutions prescribe the venues at which individuals and interest groups interact with policymakers and define what strategies for gaining the attention of policymakers are acceptable.

In the advocacy coalition framework (ACF), interest groups with shared beliefs interact and form coalitions within the policy subsystem to influence policy (Sabatier & Jenkins-Smith, 1993). Institutional arrangements circumscribe the extent of openness of the political system within which coalitions operate, determine the degree of consensus needed in the subsystem for policy change, and define the institutional position and resources available to coalitions for influencing policy (Sabatier & Weible, 2007). Policy change occurs when internal competitive forces (e.g., political-interest and self-interest) within the policy subsystem, or external shocks to the system, challenge the policy core beliefs of coalitions and cause the status quo to be unacceptable, making coalitions receptive to change (Petridou, 2014).

Policy process theories and framework, such as the IAD, PET, and ACF discussed above, provide insights on the institutional environment within which U.S. economic policymaking takes place. They highlight the myriad actors involved in economic policymaking, roles different actors play in policymaking, actors’ strategic location within institutional spaces to gain access to economic policymakers, and the mechanisms by which convergence or divergence of actors’ economic policy preferences occur within and across different actor-groups. These theories, together with minor modifications to them over time, deepen understanding of contemporary economic policy issues, such as institutional conflict and gridlock between Congress and the presidency in macroeconomic policymaking (Edwards & Wayne, 2013), judicial influence over congressional economic policymaking at the state government level (Marks, 2015), and the groundswell of interest group activity that culminated in consumer protection legislation across the nation (Sherraden & Grinstein-Weis, 2015).

Understanding of institutional interactions in policymaking has deepened due to new insights on how the media engages and alters political attention, and the ways

in which interest groups, lobbyists, and narratives shape policy decisions. The media is often described as an agent of change (Donnelly & Hogan, 2012). New media technologies and information-sharing platforms have enhanced the opportunities for political communication and altered how publics engage with government in the policy process (Wasko, 2014). Studies on the role of the media in today's digital age find that citizens learn extensively from the media about the performance and integrity of political institutions and the information they acquire becomes a critical factor for trust formation and political participation in the policy process (Camaj, 2014). Additionally, the extent to which the media engages the attention of citizens and causes them to participate in the policy process is mediated by citizens' emotional reactions to major actors—e.g., presidential candidates—in the policy process (Namkoong, Fung, & Scheufele, 2012) and the extent to which they find media information to be relevant to their individual and group interests—a case of selective exposure to politics (Bolsen & Leeper, 2013).

Studies have also compared traditional and nontraditional forms of media engagement of the public. Compared with traditional or off-line mass media forms (e.g., newspapers), internet usage among citizens reduces the degree of trust they have in government and limits the level of their compliance in government policy spheres; however, this negative effect of the internet can be counteracted by government's engagement with citizens through e-government platforms (Im, Cho, Porumbescu, & Park, 2014). Further, studies show that attention to online news during electoral campaigns predicts interest in the campaign above and beyond that of newspaper and television attention (Lovejoy, Riffe, & Cheng, 2012). In addition, social media, more so than traditional media forms, are a strong force for engaging grassroots support for political parties and their policies. For example, Eom, Puliga, Smailović, Mozetič, and Caldarelli (2015) assessed the number of tweets of a political party as a measure of collective attention to the party and found that tweet volume predicts election outcomes to an extent.

Overall, the manner in which the media engages political attention in the policy process is a good predictor of issue importance and issue knowledge and affects citizens' public-policy preferences (Hyun & Moon, 2014). In U.S. economic policymaking contexts, Rose and Baumgartner (2013) have shown how media framing of the subject of poverty has shifted over the years from discussion of the structural causes of poverty and inequality to portrayal of the poor as taking advantage of the economic system and depiction of social welfare programs as perpetuating a dependency syndrome. They note that government economic policy followed the new shift in media framing of the poor.

Similar to media framing of economic policy issues, interest group activity, and lobbying draw attention to issues across multiple economic policy domains and shape policy decisions. Interest groups pursue the interests of their members using tactics such as electioneering, lobbying, and litigating. Lobbyists pursue the agenda of interest groups they represent by locating at different institutional venues within the policy process, and use their resources, strategic location within branches of government, and access to policymakers to influence policy decisions.

Recent scholarship on interest group and lobbyists' interactions in the policy process have shed more light on interest group mobilization, lobbyists' agenda development, and resource endowment. Policy regime shifts (such as the dominance of homeland security issues during the years immediately following the September 11, 2001 attacks) cause rapid, but temporary, shifts in the focus of well-organized interest groups, and new interest groups—previously dormant—mobilize soon after the new policy regime becomes entrenched (LaPira, 2014). Additionally, lobbyists representing different interest groups may have overlapping agendas, creating opportunities for information sharing, which can lower search and information costs associated with a policy issue (Scott, 2013). Furthermore, interest groups' financial resources seem to have minimal impacts on their ability to influence policy, even though resource endowment is linked to specific lobbying strategies that may yield results for the interest group (McKay, 2012).

Emergence of the narrative policy framework (NPF) in the contemporary literature on policy process highlights the increasing emphasis on narratives and their influence on policy. Narratives are stories or scenarios that simplify and clarify policy situations (Roe, 1992). They are transmitted through policy networks and communities. Earlier studies have demonstrated that narratives serve the interests of policy experts who sustain them (Leach & Mearns, 1996) and that such stories prescribe policy solutions that may not be applicable in particular situations. Still, policy narratives play an important role in the policy process because they are embedded in institutional structures and rest in cultural and historical antecedents. Shanahan, Jones, McBeth, and Lane (2013) used the NPF to assess an environmental policy issue (proposal to install wind turbines off the coast of Massachusetts). Their work lays the groundwork for future studies seeking to understand the extent to which policy narratives influence economic policy outcomes.

Policy Implications and Directions for Future Research

This review of recent scholarship in U.S. economic policymaking focused on three themes—macroeconomic policy interactions, regulatory governance, and institutional dynamics in policymaking. The literature offers new insights on the mix of monetary and fiscal policies that can enhance welfare and shows economic conditions that are necessary for maximal benefits. Contemporary thought on the subject supports policy mixes that combine counter-cyclical fiscal policy with monetary policy targeting economic growth and employment creation, within an environment of macroeconomic policy credibility. Going forward, macroeconomic decision makers will be confronted with the task of deepening transparency and accountability of monetary and fiscal policy processes. Transparency and accountability are essential for anchoring policies further in market expectations, especially during periods of economic recovery when expectations are rebounding.

On the subject of regulatory governance, new insights on arbitrage and policy uncertainty offer a glimpse into the shortcomings of financial market innovation and multiple regulatory changes. Whether there are still lapses within the current

regulatory governance framework that permit rent-seeking behavior and arbitrage opportunities remains to be seen. One way to ensure success is for regulatory agencies in various markets and at different levels of government to create new opportunities for coordination and partnerships. This will encourage compliance and help to eliminate the potential for fuzzy jurisdictional areas that spark arbitrage behaviors. Too, growing concern about the many changes in the U.S. regulatory governance system in recent times has led to calls for the use of cost-benefit analytic tools in determining whether proposed changes to the system are justified prior to their implementation (Coates, 2015). On this issue, though, there is still no consensus among scholars, especially due to the nonquantifiable nature of some regulatory governance outcomes.

Recent scholarly exposition on the foundational theories of the policy process and institutional dynamics inherent in the process shed more light on the influence of different actors in policymaking. In particular, the expanding role of the media in engaging public attention portends remarkable innovations in the way economic policy decisions evolve among issue publics, going forward. The effect of these changes in such economic policymaking arenas as defense, energy, and climate change are relevant subjects for further research.

Overall, recent scholarship in American economic policymaking presents new insights but raises more questions for future research: How should an appropriate combination of monetary and fiscal policies evolve along different phases of the business cycle over the long term to ensure maximal welfare outcomes across generations? What roles do stability or transience of institutions play in regulatory effectiveness and long-term macroeconomic success? How is the changing face of the media reshaping the character of citizens' interactions with economic policymakers within and across institutional venues, and to what extent are these new forms of engagement relevant in macroeconomic policy choices? As the United States continues to recover from the impacts of the Great Recession, an economic policymaking agenda that draws lessons from the lapses of past regimes to inform long-term strategies will deliver the greatest good for present and future generations.

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Note

1. The National Bureau of Economic Research (NBER) describes a recession as "a period of falling economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales" (NBER, 2010, p. 1). The Great Recession, according to the NBER, lasted 18 months, beginning in December 2007 and ending in June 2009. It is the longest recession since World War II.

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Governing Complexity: Recent Developments in Environmental Politics and Policy

Bridget K. Fahey and Sarah B. Pralle

Using a large sample of articles and books published between 2012 and 2015, this review shows the recent trends in environmental politics and policy scholarship. Environmental policy scholarship has embraced the concept of governance to explain the variety of actors and institutions that surround environmental problems and solutions. Scholars in the past three years used theories and methods to capture these governing dynamics in far-reaching and complicated issues like climate change. This article discusses recent patterns in the literature and demonstrates that new methods, recent theoretical focuses, and even the environmental issues covered by scholars reflect the field's acknowledgement that scholars can and should account for complexity in their work. However, the literature has neglected certain regions and processes, such as the developing world and policy feedback processes, leaving significant gaps in our understanding.

KEY WORDS: environmental policy, environmental politics, policy process, climate change, governance, multiple methods, networks

Introduction

Understanding environmental policies requires confronting two complex and evolving systems: natural environments and human policymaking and governance. Environmental policy scholarship has embraced the concept of governance to explain the variety of actors and institutions that surround environmental problems and solutions. Scholars in the past three years used theories and methods to capture these governing dynamics in far-reaching and complicated issues like climate change. This article discusses recent patterns in the literature and demonstrates that new methods, recent theoretical focuses, and even the environmental issues covered by scholars reflect the field's acknowledgement that scholars can and should account for complexity in their work. However, the literature has neglected certain regions and processes, such as the developing world and policy feedback processes, leaving significant gaps in our understanding.

The article proceeds as follows: First, we discuss the methods employed to define the scope of environmental policy scholarship and to identify trends in the

past three years. Second, we present patterns in the literature based on quantitative and qualitative analysis of journal articles and books, commenting on promising directions as well as what we see as gaps in the literature. Last, we provide concluding thoughts about the state of the field and offer critiques for scholars to consider in future work.

Methods for Defining the Scope and Content of Environmental Policy Studies

To capture a representative snapshot of environmental policy scholarship from 2012 to 2015, we took a dual approach for collecting and analyzing publications. First, we selected a representative sample of environmental policy publications. This sample was used to generate quantitative data to discover general patterns in the literature. Second, specific publications were chosen for an in-depth discussion based on patterns discovered in our quantitative analysis as well as new or interesting directions in the literature.

Selecting Publications

Journal Articles. To capture the interdisciplinary nature of environmental policy, we created a list of political science, public administration, public policy, and environmental policy journals. We used the Web of Science's Journal Citation Reports from 2014 to generate a list of top political science and public administration journals.¹ This allowed us to use a similar metric to select journals in relevant disciplines. Many of the top journals were not focused on environmental policy, so the top 100 journals in both public administration and political science were evaluated based on the journals' mission statements. Those journals that did not mention public policy, public administration, governance, environmental politics, or environmental policy were dropped from the list. For instance, *Political Analysis* is consistently ranked #1 in political science, but because its substantive focus is on methods it was not included in this analysis. We selected the top 15 journals in both public administration and political science from this narrowed list. After accounting for journals that appeared in both lists we were left with 25 journals.² However, several important journals were missing. Therefore, we added three environmental policy journals based on search results for "environmental policy" in the JCR database³ and included the *Journal of Public Policy* because of its importance in the field of public policy. Table 1 indicates that we reviewed articles from a total of 29 different journals in four broad focal areas. We acknowledge that this list is not comprehensive, but we are confident that our sample of journals and articles captures a significant portion of the field.

For each journal, we selected articles published between January 1, 2012 and July 1, 2015 whose titles or abstracts indicated a substantive interest in environmental politics and policy. The resulting 793 articles covered a range of issues, including biodiversity, climate change, pollution, and wetlands.

Table 1. Selected Journals Based on the 2014 Journal Citation Report Rankings

Public Administration	Political Science	Public Policy	Environmental Policy
<i>Journal of Public Administration Research and Theory</i> (2.833, 4 articles)	<i>American Political Science Review</i> (3.688, 0 articles)	<i>Policy Science</i> (2.457, 14 articles)	<i>Environmental Politics</i> (1.990, 45 articles)
<i>Governance</i> (2.237, 2 articles)	<i>American Journal of Political Science</i> (3.269, 1 article)	<i>Journal of Policy Analysis and Management</i> (2.237, 6 articles)	<i>Global Environmental Politics</i> (1.763, 41 articles)
<i>Public Administration Review</i> (1.973, 4 articles)	<i>Annual Review of Political Science</i> (3.140, 2 articles)	<i>Policy Studies Journal</i> (2.000, 11 articles)	<i>Climate Policy</i> (1.675, 79 articles)
<i>Regulation & Governance</i> (1.800, 8 articles)	<i>Political Geography</i> (2.676, 10 articles)	<i>Journal of European Public Policy</i> (1.817, 7 articles)	<i>Environmental Policy and Governance</i> (1.614, 37 articles)
<i>Public Administration</i> (1.518, 3 articles)	<i>European Journal of Political Research</i> (2.508, 2 articles)	<i>Review of Policy Research</i> (1.284, 26 articles)	<i>Environment and Planning C—Government and Policy</i> (1.535, 39 articles)
<i>American Review of Public Administration</i> (1.371, 1 article)	<i>Journal of Politics</i> (2.255, 1 article)	<i>Science and Public Policy</i> (0.992, 4 articles)	<i>Journal of Environmental Policy and Planning</i> (1.510, 32 articles)
<i>Public Management Review</i> (1.207, 4 articles)	<i>Comparative Political Studies</i> (2.028, 5 articles)	<i>Journal of Public Policy</i> (0.920, 3 articles)	
	<i>British Journal of Political Science</i> (1.987, 1 article)		
	<i>Political Behavior</i> (1.691, 1 article)		

The parentheses include the Web of Science's 2014 Journal Citation Report scores (listed first) and the number of articles from this journal that were included in the sample of 393 articles (listed second). JCR scores are based on number of citations per article in other peer-reviewed journals from the previous two years. Higher values imply greater impact of the journal. Journals were categorized by the authors into these four lists based on the journal's stated mission or aims.

Books. To select academic presses, we relied on Giles and Garand's (2011) study of top presses in political science based on a reputational ranking. We selected 67 peer-reviewed books published between January 1, 2012 and December 31, 2014 from the top 15 presses.⁴ In selecting books to include, we looked for books whose main emphasis was on environmental governance, policy, and politics. These categories included books on environmental economics, ethics, sustainable development, history, law, and regulation insofar as such books had implications for environmental policy and politics. We did not include books designed to serve as textbooks, nor did we include new editions of previously published books.

Sampling and Coding Methods

We selected a total of 393 articles for quantitative analysis to attain a confidence interval of ± 3.5 percentage points with a 95 percent confidence level for all of the descriptive statistics in this study. We used a stratified selection technique to ensure that every journal was included. For each journal, we selected every other article in chronological order starting on either the first or second article based on a coin flip.⁵

We wrote initial descriptions of each article based on article abstracts (supplemented when needed with the body of the article) to use as a starting point for coding. We used inductive coding, which allowed us to capture the variety in the articles

but avoid selecting topics based on our backgrounds and interests. First, we looked for information about the articles' methods, theoretical basis, geographic area of focus, location of the authors' home institution(s), and topic(s) of focus (including political or policy theories and environmental issues). Second, we evaluated the initial descriptions to generate a list of variables. Then, we created codes for the following variables: (i) the geographic focus of the article; (ii) the author's home institution and whether it matched the geographic focus of the article; (iii) nine environmental topics variables: *pollution, energy, climate change, ecosystems, natural resources, agriculture and aquaculture, natural disasters, environmental justice, and sustainability*; (iv) 19 policy theory variables: *theories of the policy process, organization theory, governance, networks, collective action, institutions, private sector, civil sector, economic instruments, agendas, policy design, implementation, evaluation, norms, conflict and security, risk management, science and technology, public opinion and participation, and spatial distribution*⁶; and (v) the number and types of methods. Each article was then coded for these 33 variables using the initial descriptions. The resulting dataset allowed for frequency analysis and cross-tabulation analysis to identify patterns in this sample (described below).

The books were reviewed separately to account for edited volumes with multiple authors, topics, and methods. We noted the environmental topic(s) and main theoretical concepts covered in the books, but did not conduct quantitative analysis because of their lower number.

Selecting Articles and Books for Close Readings

In addition to the quantitative analysis, we selected 60 articles and 12 books for an in-depth qualitative discussion of trends in the environmental policy literature. To select articles, we looked at each article's title and author to create a short list of more than 100 articles that matched the trends we were interested in exploring. Then, we read through abstracts and the body of the papers to select articles that exemplified the themes we identified in the literature. The articles were selected from the entire population (793 articles) to avoid amplifying any sampling errors. We made sure to include articles that represented new or intriguing directions in the literature, including some of the topics identified in Sabatier and Weible's (2014) *Theories of the Policy Process* (3rd Edition). We acknowledge that our chosen themes partly reflect the previous knowledge and interests of the authors; however, we tried to rely on the quantitative data to avoid bias. We chose books that explained environmental politics and policy using key theories and concepts in political science, especially those found in the literature on policy processes, comparative politics, and international relations.

Patterns and Developments in the Literature

Geographic Scope and Scale

The 393 articles in the sample were written by 764 authors representing 42 countries. Most of the articles had two authors (62.8 percent) and a significant number had

three or more authors (37.2 percent). There were 115 articles (29.3 percent⁷) where at least one author's home institution was in the United States and 86 articles (21.9 percent) where all authors were from U.S. institutions. Of the articles in the sample, 358 articles (91.1 percent) had at least one author from Europe, North America, or Australia. Only 35 articles were written by authors from South America, Africa, and Asia. When combined with the fact that slightly more than half of the articles (52.9 percent, 208 articles) examined a country where at least one of the authors lived, we see a clear geographic bias in the articles focusing on North America and Europe. While environmental policy scholars did not ignore Africa, Asia, Australia-Oceania, and South America, these areas received much less attention than North America and Europe.

As Figure 1 shows, about one-third of the articles (103 articles, 26.2 percent) had a global focus, meaning they looked at either international relationships or included three or more continents in their study. Studies looking at Europe (107 articles, 27.2 percent) and North America (89 articles, 22.6 percent) by far dominated the sample, with studies of Asia (46 articles, 11.7 percent), Australia-Oceania (19 articles, 4.8 percent), South America (16 articles, 4.1 percent), and Africa (11 articles, 2.8 percent) trailing far behind. Accounting for the geographic scope and scale⁸ of environmental policy research illuminates potential biases in the literature. The heavy focus on Europe and North America could reinforce assumptions about professionalized legislatures and bureaucracies that may not apply to less developed areas of the world. A bias toward Westernized countries might also mean that the literature includes more coverage of issues like hydraulic fracturing, as compared to salient issues in the developing world, such as the tension between agricultural development and forest conservation. Moreover, scholars are missing an opportunity to understand environmental politics in countries that have large impacts on the global environment—countries like China, India, and Russia—as well as countries that will be especially vulnerable to biodiversity loss and climate change, such as Indonesia and Bangladesh. Future researchers should be mindful of these gaps when choosing theory and empirical investigations.

Environmental Issues and Theoretical Orientations

As shown in Figure 2, climate change studies dominated the environmental policy literature in the last three years. Nearly half of the surveyed articles and one-third of the books discussed this topic. Other popular topics included ecosystem management, natural resources management, and sustainability studies. Although governance dominated the theoretical questions raised in the articles, questions about political economy or economics, institutions, and participation comprised a significant portion of the sample.

Methodological Approaches

Qualitative methods were used most often; two-thirds of the sampled articles (262 articles) used qualitative methods, of which 160 included case studies. Indeed,

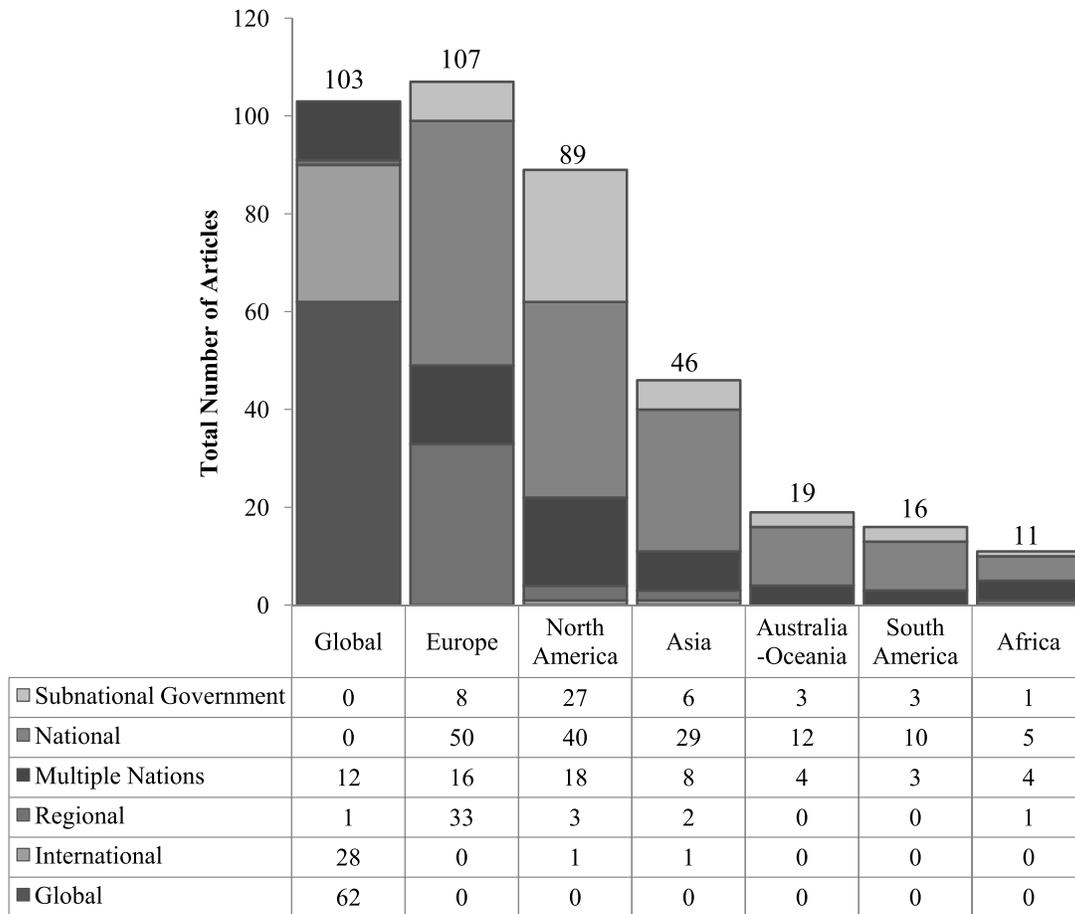


Figure 1. Geographic Focus by Continent.

The geographic focus of the sample articles is shown above. The bar height indicates how many articles focused their attention on each continent or had a truly global focus. The number of articles exceeds the total sample size (393) because many articles focused on more than one continent. For instance, a study comparing China and the United States was coded for a focus on North America and Asia. The layers in each bar represent the scale or level of analysis for the article.

case studies dominated the methods employed; of the articles using a single method (51.1 percent, 208 articles) over a third were case studies (36.1 percent, 75 articles). Additional qualitative methods included content analysis, discourse analysis, and process tracing. The literature also included a large number of multiple method studies. Although only 29 articles (7.4 percent) used a mix of quantitative and qualitative methods, almost half of the articles (183, 46.6 percent) used at least two methods, such as case studies and content analysis or regression analysis and network analysis.⁹

Although environmental policy scholarship is dominated by case studies, some scholars have employed new methods in an attempt to capture the complexity of their topics. There were some notable examples of creative methods, especially in regards to studying networks. One example, Dallas Elgin's (2015) study of climate change opponents and supporters in Colorado, employed a hyperlink analysis to determine the membership and online communications used by subsystem members. As Elgin demonstrates, hyperlink network analysis can easily bridge

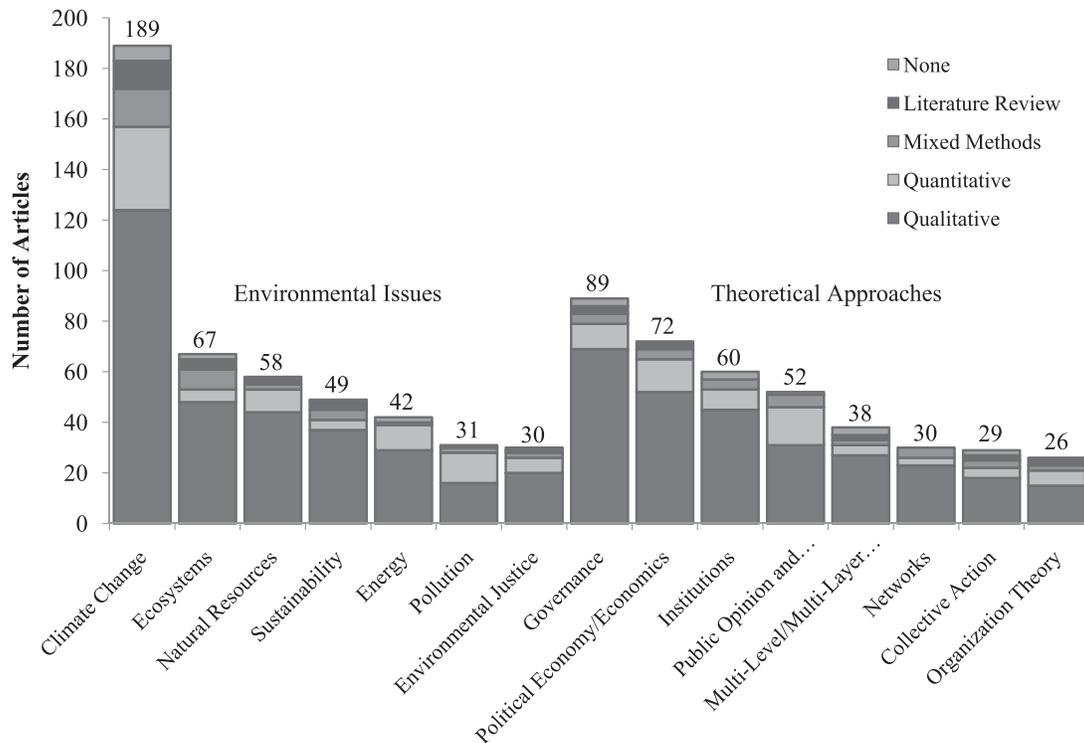


Figure 2. Article Topics and Methods Used.

Topics with more than 25 articles are included in the graph above. The total number of articles that focused on that topic is represented by the bar's height and within each bar, the layers show the breakdown of the methods used in those articles. The total number of counts in the graph exceeds the total number of articles in the sample (393) because several articles mentioned more than one environmental issue or took on multiple theoretical concepts.

quantitative and qualitative analysis with a single tool. Similarly, Craft and Howlett (2013) used virtual policy network analysis, which examines information exchange over the Internet, to understand the governance arrangements and institutional capacity of various United States and Canadian policy sectors to adapt to climate change.

The past three years have also seen a rise in new qualitative analysis approaches. A special issue of *Global Environmental Politics* introduced collaborative event ethnography (CEE) as a technique to understand nuances in structural power in international environmental negotiations (Büscher, 2014; Duffy, 2014). The technique requires a team of researchers to simultaneously engage in a reflective and reflexive ethnography at the same event. Many of the benefits of this form of ethnography emerge during deliberation after the observation phase. The special issue on the benefits of CEE included empirical studies examining institutional arrangements in biological diversity protection (Campbell, Hagerman, & Gray, 2014; Gray, Gruby, & Campbell, 2014), personal relationships between negotiators (Corson, Campbell, & MacDonald, 2014), and policy area definitions (Scott, Hitchner, Maclin, & Dammert B., 2014).

While scholars chose qualitative methods over quantitative, a portion of the articles (19.6 percent) used quantitative methods. Several scholars developed

stronger quantitative measures of complex environmental policies. In their study of U.S. state renewable energy policies, Berry, Laird, and Stefes (2015) demonstrated that more precise dependent variables are necessary to capture important dynamics like the effectiveness of state renewable energy targets and the influence of partisan control of state legislatures. They developed a variable that takes into account the presence or absence of a policy, the ambitiousness of the policy goal, and the time-frame for a state to reach their goal. The results of their study were significantly different from other state-level analyses because of their more nuanced measurements. For example, other analyses have found little or no impact of political party control of the legislature, whereas Berry et al. (2015) found it to be significant.

Adam Eckerd (2013) presented an intriguing way to use quantitative modeling to simulate the environmental justice consequences of hazardous waste clean-up. Eckerd's counterfactual simulation shows environmental agencies could prioritize clean-up efforts by focusing on areas with high amounts of pollution rather than those with high property values or with large minority populations. This approach avoids encouraging gentrification (effectively pushing out the population that was harmed by the hazardous waste once the environment is restored) by focusing on pollution risk. Overall, these efforts represent attempts to develop more sophisticated methods for capturing the complexity inherent in environmental policy development and governance.

Climate Change Politics and Policy

One of the most complex issues in environmental policy is climate change, and it was by far the most popular topic in our sample of articles and books. Almost half of the articles (48.1 percent; 189 articles) examined some aspect of climate change, and it was the prominent or a primary topic for about one-third of the published books. Scholars treat climate change as a multilevel and multijurisdictional problem requiring cooperation across numerous policy sectors and levels of government, and among multiple actors. Cooperation and coordination is needed for both climate mitigation and climate adaptation.

The 2015 climate agreement in Paris is a reassuring sign that international cooperation on climate change may yet prove effective, but actions at national and subnational levels will remain crucial to realizing climate mitigation goals. Any international agreements must be carried out by national governments, and especially in the case of laggard states, subnational governments will continue to serve as venues for advancing climate goals (Bomberg, 2012; Harrison, 2012; Rabe & Borick, 2012). Bechtel and Urpelainen (2015) claim that local climate policies serve as a way to pressure the international community to act on climate change, while others see subnational policies as an alternative to international agreements (Geist & Howlett, 2013; Krause, 2012) or national policies (Owens & Zimmerman, 2013). Regardless, some subnational governments are moving forward with climate policies even in the absence of significant national or international action. In Canada, for example, British Columbia successfully enacted a carbon tax even while the (now former) Harper

government withdrew Canada from the Kyoto Protocol (Harrison, 2012). In the United States, where significant federal regulation on carbon emissions has only come recently in the form of executive actions, many states are enacting taxes and other measures that impact carbon use (Rabe & Borick, 2012). In jurisdictions where invoking “climate change” and “taxes” may be politically risky, alternative ways of framing such policies can lead to policy success (Rabe & Borick, 2012).

Climate mitigation policies, though, rarely come easily at any level of government. The barriers are familiar and fairly well understood; the interesting questions now concern how climate change reformers may overcome such barriers, particularly as they seek change across multiple levels and jurisdictions. These questions have become especially urgent in countries where public belief in and worry about climate change has decreased in recent years (Bomberg, 2012; Lachapelle, Borick, & Rabe, 2012). As Bomberg (2012) reminds us, building public awareness and increasing the salience of the problem is only the first step. Crafting alliances across constituencies is also critical, a job that European activists have accomplished more readily than their American counterparts in part due to institutional structures (such as the Green Party) that facilitate and cement such alliances (Bomberg, 2012). However, alliance building is not enough; Bomberg argues that “mobilization networks”—entities that can “transcend levels, institutions, and interests”—are necessary to shift policy toward climate goals. These stakeholder networks are not held together by shared beliefs but rather shared interests in a low-carbon future and by an exchange of resources. Like the case of alliance building, Bomberg finds that mobilization networks were more successful in the European Union than in the United States.

These mobilization networks often cross several national borders, and according to some scholars, play an increasingly important role in climate governance. Bulkeley and her colleagues show that transnational climate initiatives are most common in the areas of energy, carbon markets and finance, forest preservation, and infrastructure (Bulkeley et al., 2014). They argue that these initiatives are not an adequate substitute for multilateral negotiations on climate change, but praise them for allowing direct, decentralized, and diverse approaches to combatting the problem. Such transnational governing initiatives have drawn in a growing number of actors and institutions, including subnational governments, nongovernmental organizations, businesses, and even individuals, arguably improving climate governance by increasing participation and accountability.

While some scholars see greater opportunities for participation in climate governance outside the confines of formal multilateral negotiations, others claim that it is necessary and possible to democratize global climate institutions and processes, such as those taking place under the auspices of the United Nations Framework Convention on Climate Change. For Stevenson and Dryzek (2014), formal international negotiations should employ deliberative processes and include multiple perspectives and discourses. This would allow for more citizen input and public accountability in the negotiations. The authors’ attention to normative questions is echoed in several books on climate change, many of which provide advice on how to improve climate change governance and how to incorporate values and ethics into climate change policy processes (D. Arnold, 2014; Gardiner, 2011; Moellendorf, 2014).

Justice and equity concerns have long been a component of international climate negotiations, of course. Even with the enactment of the 2015 Paris climate agreement, which sidestepped some tricky questions by leaving it up to individual countries to determine emissions-reduction levels, such issues will continue to surround international climate policy and be topics of scholarly debate. Harris and Symons (2013), for example, address the equity implications of different emissions-accounting schemes. In production-based accounting, emissions are assigned to the jurisdiction where the emitting good is produced, but in consumption-based accounting, emissions are assigned to jurisdictions where goods are consumed. Production-based accounting schemes encourage developed countries to import goods with large greenhouse gas footprints, a process the authors call “emissions off shoring” (Harris & Symons, 2013, p. 15). Policy agreements that consider only production-based emissions may encourage off shoring and inhibit the enactment of consumption-reducing policies.

Even if international, national, and local efforts to mitigate climate change succeed in limiting the rise in global temperature, the world must still grapple with adapting to the many impacts of climate change. Climate adaptation planning is in its infancy around the world, but scholars are examining these efforts in an attempt to understand what factors facilitate successful adaptation planning and policy implementation. A recurring theme is that governments currently lack the capacity to adapt to changes that will impact a host of policy sectors, including energy, transportation, forestry, agriculture, housing, zoning, and infrastructure. Many scholars see potential, though, in what is called “climate policy integration” (CPI), whereby existing policies are changed to include climate goals (Adelle & Russel, 2013).

The goal of CPI—also referred to as “mainstreaming” or “proofing”—is to achieve climate adaptation goals without creating new institutions.¹⁰ Some scholars argue that CPI is potentially dangerous because it allows for symbolic commitment to climate goals without dedicating resources to adaptation (e.g., Uittenbroek, Janssen-Jansen, Spit, Salet, & Runhaar, 2014). Others see mainstreaming as a politically feasible pathway to address climate change, especially in highly polarized political contexts where the issue may be taboo (e.g., Haywood, Brennan, Dow, Kettle, & Lackstrom, 2014). Mainstreaming requires extensive knowledge of ecosystems that are changing as a result of climate change, as well as the flexibility to adjust policies and practices over time. Janssen, van Tatenhove, Otter, and Mol (2015) point out the difficulties involved in mainstreaming what they call “green flood protection” in the Netherlands. Many experts endorse “soft” flood protection measures such as the rebuilding of wetlands over “hard” protections like levies. But, mainstreaming these soft measures into everyday flood protection institutions and routines proved difficult, so advocates in the Netherlands had to go outside of existing institutions to achieve their goals (Janssen et al., 2015).

In almost all political contexts, bureaucrats will play a particularly important role in facilitating CPI, but they do not always have the capacity and institutional leverage to see it through. Picketts, Curry, and Rapaport (2012) show that planners in British Columbia, Canada preferred that adaptation goals be incorporated into existing planning documents, but the planners lacked crucial knowledge about what adaptation was, how it differed from mitigation, and how to accomplish it.

Additional studies of adaptation in Canada suggest that national and subnational governments may give lip service to adaptation but often fail to provide the necessary resources for planning and implementation (Craft, Howlett, Crawford, & McNutt, 2013).

Climate change adaptation may also take the form of “layering” adaptation policies on existing policies and processes. These approaches are also likely to run into challenges, as agencies and existing policies can embody fundamental goals and values that are incompatible with, or exist in an uneasy relationship to, climate goals (Newman, Perl, Wellstead, & McNutt, 2013). In these cases, the lack of capacity is not due to information or funding gaps, but stems from the core beliefs of administrators and from embedded policies that shape future policy choices and designs. Bauer, Feichtinger, and Steurer (2012) call these “governance challenges” and speak of the need to integrate adaptation planning and policies across different sectors, as well as the necessity of engaging the public in adaptation governance to ensure fairness, promote grassroots commitment to adaptation goals, and to utilize local knowledge. The governance and participation themes are prominent in much of the literature in environmental politics and policy, a subject that we turn to in more detail next.

Policy and Politics Theory Testing and Development

Governance and Participation. Governance has been used as a way to examine the variety of actors and institutions that shape environmental policy, especially within multifaceted policy areas like climate change and ecosystem management. Governance was a dominant theme in 22.7 percent of the journal articles (89 articles), a reflection in part of the influence of public administration scholarship on public policy studies. Some key questions for scholars and practitioners include how to involve and coordinate a wide variety of actors in governance arrangements, develop positive working relationships among them, and empower less dominant voices. While there are many barriers to effective participation in environmental governance, Woods’s (2013) study of participation in the development of U.S. Environmental Protection Agency rule-making reminds us that public and stakeholder participation can change the substance of policies. Consequently, the question of how to involve and incorporate multiple voices in environmental governance is likely to remain an important one.

The governance of multiscalar environmental problems often requires involving officials from multiple jurisdictions (national, regional, local), stakeholders with overlapping but sometimes conflicting interests, and the wider public. Coordination and cooperation sometimes proves difficult, leading to implementation problems and a failure to meet policy goals. For example, Temby, Rastogi, Sandall, Cooksey, and Hickey (2015) ask about levels of communication, trust, and social capital in the trans-boundary governance of Pacific Salmon fisheries. They find low levels of trust among civil servants across jurisdictions and patchy communication, suggesting weaknesses in the governing arrangement. Newig and Koontz (2014) find that public participation is enhanced under the European Union’s requirement for extensive participation in all phases of the policy process. However, these participation

requirements introduce national and EU-level debates into local level river basin, flood risk, and air quality policies, slowing down local implementation efforts. Environmental governance has clearly moved in the direction of more participation, less hierarchical institutional arrangements, and more varied forms of governance. Still, scholars and activists warn that marginalized voices can be left out or drowned out. For instance, Duffy (2013) argues that global endangered species governing institutions delegitimize tribal communities in Africa who hunt endangered species. Duffy is critical of so-called “privatized” forms of governance where nongovernmental actors (including NGOs and businesses) play a large role. She argues that these governance forms can depoliticize issues, making it seem as though all the players share common interests, when powerful actors are the primary beneficiaries. Klenk, Reed, Lidestav, and Carlsson (2013) found that cultural “rules” structuring participation significantly limited indigenous participation in Canadian and Swedish forestry governance networks, decreasing the legitimacy and effectiveness of network government.

Even when institutional systems enable participation, scholars identified barriers to public participation in environmental governance. For example, Delbourne, Schneider, Bal, Cozzens, and Worthington’s (2013) study of citizen deliberation before the Copenhagen climate conference found that the World Wide Views on Global Warming program¹¹ succeeded in creating space for citizen deliberation, but concluded that citizens’ views were not effectively communicated to policymakers at the conference. In another example, the use of e-governance in developed nations does not guarantee public influence on environmental policy outcomes (Royo, Yetano, & Acrete, 2014). Policy decentralization, designed in part to improve citizen participation in local governance, may lead to more participatory processes but the extent varies across jurisdictions (van Laerhoven, 2014). In a study of environmental decision making in municipal Brazil, van Laerhoven found that deeper and broader forms of public participation were more likely to emerge when fewer government officials were involved, and when citizens had previous experience with similar participatory processes.

The focus on policy networks and complex governance has led some scholars to issue a warning that not all actors are equally important for understanding environmental policy outcomes. Duit’s (2014) edited volume, *State and Environment: The Comparative Study of Environmental Governance* argues that states remain important—indeed, central—players in environmental politics and policy. As stated in the preface of the book, industrialized countries’ environmental protection policies and institutions are the “most comprehensive response issued to environmental problems by society writ large, dwarfing the environmental efforts of markets, international organizations, and individuals in both scope and impact” (Duit, 2014, p. xii). So, while new forms of governance deserve our attention, scholars should take into account the outsized role of state actors.

Public Opinion, Interests, and Mobilization. Scholars interested in processes of agenda setting, policy enactment, and policy implementation continue to look at the role that public opinion, interest groups, and grassroots mobilization play in these processes.

Some of the key theoretical questions raised by this research are whether public opinion matters for policy, how interest groups strategize and shape policy outcomes, and the impacts of grassroots mobilization around the environment.

The attitudes of the public toward environmental policies can be viewed as an achievement of the environmental movement, as well as a necessary condition for the long-term success of the movement and continued progress toward environmental policy goals (Guber, 2003; Harrison, 2012). The U.S. environmental movement, for example, has succeeded in convincing the majority of Americans to embrace broad environmental values and goals, but the political salience of environmental issues remains low and the depth of the public's commitment is questionable (Guber, 2003). Moreover, public opinion on specific issues is elastic, shifting in response to political events, economic conditions, issue frames, and other factors. (In the case of climate change, even an individual's experience of local weather patterns affects their opinions on climate change. See, e.g., Lachapelle et al., 2012). One of the most dramatic examples of shifting opinion is the case of U.S. public attitudes toward climate change. Research shows a decline in public belief in climate change since 2009, driven in part by diverging attitudes between self-identified Republicans and Democrats as the issue has become polarized along partisan lines (Lachapelle et al., 2012).

Issue frames also affect public attitudes on environmental issues. Oxley, Vedlitz, and Wood (2014) found that individuals were more concerned about climate change when the consequences were framed as severe and when individuals perceived the messenger as credible. The authors argue that increased concern should translate into greater willingness to identify climate change as the government's responsibility and lead to greater support for climate solutions. The link between public attitudes and policy action is complex, however. While democratic political systems should translate public support into policies, scholars understand that several factors mediate this relationship, including electoral rules, interest group politics, and federalism. Lachapelle et al. (2012) find a correlation between supportive public opinion and climate mitigation policies in Canadian provinces, for example, but note the limits of inferring a direct causal relationship between the two. Indeed, they raise the intriguing possibility that public support for carbon taxes may be the *result* of policy change and implementation, as well as a cause of it.

The gap between public opinion and policy outcomes is evident in Ansolabehere and Konisky's (2014) multiyear study of Americans' attitudes toward energy technologies and policy. People's attitudes toward energy are relatively stable, they argue, and are shaped by two key attributes of the fuels themselves: price and environmental harm. But, people put much greater weight on the environmental impacts of different fuels, the most important being the local pollution that results from the extraction and (typically) burning of fossil fuels. This helps to explain public opposition to high volume hydraulic fracturing (and to New York State's 2015 ban on fracking) even though it has led to lower energy prices for consumers. At the same time, renewable energy sources supplied only 10 percent of total U.S. energy consumption in 2014 and the United States leads the world in oil and gas production (U.S. Energy and Information Administration, 2016). Clearly, a gap exists between what the public wants in terms of its energy mix and national energy policy.

Understanding gaps between public preferences and policy outputs can lead to a focus on interest group politics. Judith Layzer's (2012) *Open for Business: Conservatives' Opposition to Environmental Regulation* describes the processes by which antiregulatory interest groups, think tanks, and politicians in the United States have advanced an antienvironmental agenda. Layzer argues that the public popularity of environmental policies constrains the ability of opponents to wage direct attacks on environmental regulation. Antiregulatory interests have thus embraced low-profile challenges that have weakened environmental laws and have prevented the advancement of new policies to address climate change and other emerging problems. Because these challenges are not highly visible to the public, environmental policies may weaken even in the context of relatively high public support for environmental goals.

Business groups have a more complicated relationship to environmental policy than Layzer's book suggests, however. Several scholars address the role of business in *advancing* environmental initiatives and programs through, for example, voluntary programs. Prakash and Potoski (2012) found that voluntary programs are popular with businesses, especially in the context of weak institutions, but in another study conclude that such programs resulted in only moderate reductions in water pollutants and no significant reductions in air pollutants (Potoski & Prakash, 2013). When considered from the business perspective, voluntary programs can inspire innovation (Lim & Prakash, 2014) and provide reputational benefits as well as more tangible benefits like capital investments and information access (Hsueh & Prakash, 2012). The authors admit that voluntary efforts are not currently producing significant environmental benefits, but argue for the potential for such programs to inspire future benefits.

Not everyone sees businesses' environmental initiatives in a positive light. In *Eco-Business: A Big Brand Takeover of Sustainability*, Dauvergne and Lister (2013) argue that corporations use sustainability as a business tool to capture market share in an increasingly globalized and volatile economy. Many environmental organizations, frustrated with the pace of government action around sustainability, lend legitimacy to these corporate efforts by partnering with Coca-Cola, Walmart, and the like on their sustainability programs. While such partnerships can benefit both businesses and environmental groups, and may lead to environmental improvement, the authors are skeptical. They fear that the movement toward green business could lull us into thinking we have solved the sustainability problem. More importantly, private corporations are increasingly crafting rules and creating monitoring and enforcement regimes in a growing set of policy areas. In short, they are governing and defining sustainability in ways that suit their own interests.

Other studies of interest groups focus on the growth and effectiveness of environmental advocacy groups. International climate negotiations have attracted a growing number of advocacy groups, which have proliferated in a transnational context in much the same way as they would in a domestic one (Hanegraaff, 2015). Hanegraaff (2015) finds that groups with greater resources and more connections to policymakers were the first to participate in global climate summits, while subsequent waves of interest groups brought more diversity to the universe of represented

groups. Success in mobilization and success in shaping policy outcomes may be linked. Andlovic and Lehmann (2014) and Bunea (2013), for example, find that groups trying to shape the development of E.U. environmental policies tended to have greater resources, greater access to policymakers (to provide information and issue definitions), and the ability to mobilize support.

Grassroots mobilization is often seen as a way to put environmental issues on public and governmental agendas. Konisky and Reenock (2013) show that grassroots mobilization can also shape bureaucratic and firm behavior in the context of regulatory compliance. Their theory of “compliance bias” posits that a mobilized community increases the costs to bureaucrats and firms of failing to comply with environmental regulations. Put differently, poor and minority communities that are better mobilized may decrease the likelihood that these communities will suffer injustices in the form of weak regulatory enforcement.

Policy Convergence. Do environmental policies in different countries and across jurisdictions become more alike over time, and if so, why? These questions have been at the heart of a growing literature on environmental policy convergence. One of the latest contributions is *Understanding Environmental Policy Convergence: The Power of Words, Rules and Money*, edited by Jörgens, Lenschow, and Liefferink (2014). Building on an earlier volume based on a large-scale quantitative study of environmental policy convergence, this volume uses a comparative case approach to study the mechanisms of policy convergence in four European countries. Identifying five basic mechanisms driving convergence—international harmonization, transnational communication, regulatory competition, imposition, and parallel problem pressure—the authors seek to understand how these mechanisms work to affect change (or not) in a country’s domestic environmental policies. The two volumes together offer evidence of extensive policy convergence across European countries in the direction of more strict regulation.

While several scholars offer evidence of environmental policy convergence, David Vogel (2012) traces the divergence of state regulatory regimes in the United States and the European Union in *The Politics of Precaution*. Vogel claims that the United States and the European Union have switched places when it comes to the stringency of their regulations around issues like air pollution, food safety, and chemicals and hazardous substances. The United States, once the leader in regulation around health, safety, and environmental risks, has lagged behind Europe since 1990. California, once an “exporter” of more stringent regulatory standards to Europe, now borrows ideas from Europe, which moved beyond the United States in terms of the extent and span of its risk regulation. Vogel attributes this policy divergence to three factors: a shift in the political salience of risks (in the United States, salience has decreased among the public while in the European Union it has increased), changes in the political preferences of influential policymakers in the United States and European Union since 1990, and changes in the criteria used to assess risks. Vogel claims that the European Union has embraced more precautionary approaches to regulation, allowing policymakers to act in the face of scientific uncertainty, while the United States has emphasized scientific risk assessment and

cost-benefit analysis, criteria that lead to less stringent regulation. He reminds us that the trajectory of environmental policies is shaped by domestic political contexts that may lead countries to look less alike over time rather than more alike.

Policy Process. Scholars in the past three years continued the tradition of using environmental policy topics to develop many of the major theories of the policy process.¹² Researchers contributed empirical tests and theoretical development for the Multiple Streams Framework (e.g., Palmer, 2015), the Punctuated Equilibrium Model (e.g., Busenberg, 2013; Mondou, Skogstad, & Houle, 2014), the Institutional Analysis and Development Framework (e.g., Arnold & Fleischman, 2013), and the Advocacy Coalition Framework (e.g., Elgin, 2015; Heikkila et al., 2014). Development of the relatively new Narrative Policy Framework (NPF) continues this tradition, as NPF scholars used the cases of wind power (Shanahan, Jones, McBeth, & Lane, 2013) and climate change (Jones, 2014) to further build and refine the framework.

Beyond contributing to theories of the policy process, the literature has prioritized studies of agendas (47 articles, 12.0 percent), policy design (26 articles, 6.6 percent), and implementation (21 articles, 5.2 percent) over policy evaluation (7 articles, 1.8 percent) and feedback (no articles in the sample). Agenda-setting scholarship included articles on advocacy group strategies and media framing. A common theme was identifying the agenda-setting power of the media and elites. News media outlets were found to have significant agenda-setting impacts by both Stoddard and Tindall (2015) and Jenner (2012), although it is important to keep in mind that the news media employs multiple frames and the presence of competing frames may mitigate their effects. Jenner's work identified an interesting phenomenon where environmental news photographs had a greater effect on elites' agendas than on the public's agenda. Studies that focused on elites' power to shape agendas, including Palmer's (2015) study of E.U. biofuels policy entrepreneurs and Shin and Choi's (2015) study of risk perception of climate change and energy in the United Kingdom, show that institutional power struggles limit elites' influence.

Many of the policy implementation articles focused on long recognized environmental problems like pollution abatement and wetlands preservation, and highlighted the role of a bureaucrat's personal experiences and attitudes in shaping implementation success. For example, Gwen Arnold (2014) finds that street-level U.S. wetlands regulators are more innovative when they are in touch with other bureaucrats through professional or peer networks. Denhardt (2014) shows that positive bureaucratic attitudes toward cost-benefit analysis predict its use as policy tool for German water policy. Teodoro (2014) demonstrates that water utility managers who are engineers are more likely to fully comply with the U.S. Safe Drinking Water Act than nonengineers. These studies suggest that environmental scholars working on newer policy issues like climate change and sustainability need to consider the importance of buy-in from implementers as well as stakeholders.

Environmental policy scholars neglected the role of policy feedback in environmental policy processes. Only one article in the population of journal articles (but not included in the journal sample) explicitly used feedback concepts in its analysis. Jordan and Matt (2014) argue that climate change policy design should account for

potential feedback effects and should include features that would maintain the policy over time. Layzer (2012) is one of the few scholars who explicitly drew on the social welfare literature and the ideas of scholars like Jacob Hacker and Paul Pierson. In *Open for Business*, she argues persuasively that the environmental policy arena has exhibited policy drift and conversion similar to that found in U.S. social welfare policy.

We believe that more scholars should use theories and concepts that are loosely grouped into the policy feedback and policy retrenchment literature. Environmental politics is ripe with examples of policy feedback, whereby environmental policies have resource and interpretive effects that have reshaped subsequent politics. Environmental policies also build institutions and become institutionalized in a way that creates new facts on the ground. While environmental policy scholars may implicitly acknowledge such impacts and even detail them in their studies, they miss an opportunity to connect with policy feedback scholars by not explicitly using these theoretical constructs in their analyses. Moreover, we miss an opportunity to test, expand, and revise policy feedback theory with environmental policy case studies. Given the importance of environmental cases to building other policy process theories, this lack of attention to policy feedback theory is notable.

Conclusion

In this discussion, we show that the literature has risen to the challenge of studying the complexity inherent in environmental policy. Scholars looked at multilayer and network governance, public participation and mobilization, the role and influence of interest groups and business interests, and policy convergence while studying important issues like climate change and natural resources management. The field has also posited important questions about how to encourage mobilization and participation for a wide variety of actors, how local governments can play a role in solving global issues, and how business interests shape policy outcomes for better or for worse. Yet, scholars left important areas unexamined in the literature in the past three years by focusing more on the developed world than the developing world, and barely addressing policy feedback and retrenchment. We encourage scholars to think about these gaps moving forward.

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Notes

1. There was no equivalent list for public policy or environmental policy journals. However, as shown in Table 1, this approach did capture important public policy and environmental policy journals.

2. Journals that appeared in both lists were *Governance*, *Journal of European Public Policy*, *Policy Studies Journal*, *Public Administration*, and *Regulation and Governance*.
3. These journals were *Environmental Politics*, *Environmental Policy and Governance*, and *Journal of Environmental Policy and Planning*.
4. The top 15 presses were: (1) Cambridge University Press, (2) Princeton University Press, (3) Oxford University Press, (4) University of Chicago Press, (5) Harvard University Press, (6) Cornell University Press, (7) University of Michigan Press, (8) Yale University Press, (9) University Press of Kansas, (10) CQ Press, (11) University of California Press, (12) Johns Hopkins University Press, (13) Brookings Institution Press, (14) Georgetown University Press, and (15) MIT Press. We did not include 2015 volumes because books tend to have more longevity than articles and 2015 books can therefore be included in the next review article.
5. The *American Journal of Political Science* and *Political Behavior* only had one environmental policy article published in the timeframe; each was automatically included.
6. The nine environmental topics and 19 policy theory dummy variables were not mutually exclusive. Although it was not the case, it was possible for an article to be coded as 1 (present) for all 28 dummy variables.
7. Percentages are reported to one decimal place and rounded up or down.
8. Scope is measured using dummy variables to account for which continents the article focuses on. The articles that examined more than one continent are counted toward both continents' totals. Those articles that took on a truly global focus, like those studying United Nations conferences, are coded as globally focused. Unlike scope, scale is coded as a mutually exclusive variable and categorized into global, international, regional, multiple nations (without a regional focus), national, and subnational.
9. Often the multiple methods employed were either both qualitative or both quantitative approaches.
10. CPI is also found in climate mitigation policies and practices. See, for example, Rietig (2013).
11. Organized by the Danish Board of Technology, the World Wide Views on Global Warming program facilitated citizen deliberations in 38 countries on September 26, 2009 (Delbourne et al., 2013).
12. For instance, Baumgartner and Jones's (2009) punctuated equilibrium theory was developed in part using nuclear power policy and pesticides regulation; Elinor Ostrom's Institutional Analysis and Design framework was influenced by her interest in environmental common-pool resources (Ostrom, Cox, & Schalger, 2014); and the Advocacy Coalition Framework had 128 empirical applications (57 percent of all applications) using environmental topics between 1987 and 2013 (Jenkins-Smith, Nohrstedt, Weible, & Sabatier, 2014, p. 210).

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Rediscovering Defense Policy: A Public Policy Call to Arms

Brandon J. Archuleta

Since 9/11, policy scholars have made significant inroads with tremendous insights into U.S. homeland security policy, especially in the areas of counterterrorism and disaster relief. But as the wars in Iraq and Afghanistan raged on, the public policy field largely ceded questions of traditional defense policy to international relations and security scholars. This was a mistake. The time has come for policy scholars to rediscover defense policy and rejoin America's national security conversation. With defense spending in decline, the All-Volunteer Force in transition, and emerging threats on the rise, research on defense budgeting and management, military social policy, and cyber bureaucracy are all ripe for scholarly examination. This research note reviews the latest work in the field, reinvigorates national security research agendas for the twenty-first century, and explores several ideas for the way ahead in defense policy scholarship.

KEY WORDS: institutions, processes, defense, national security, foreign policy

Introduction

With the official end of the Iraq War, continued fighting in Afghanistan, the rise of the Islamic State (also known as ISIS or ISIL), Russian aggression in the Crimean Peninsula, China's dispute over the Senkaku Islands, and a myriad of other security concerns around the globe, defense and national security research remains an ever-important field of study for scholars aiming to inform both the policy studies literature and contemporary policy debates. In this journal's previous defense and public policy review, Ripberger (2011, p. 78) rightly notes that the attacks of September 11, 2001 "propelled defense and security back onto the [policy studies] research agenda." More importantly, "[M]odern policy scholars are beginning to focus on defense and security in a way that informs policymakers and advances policy theory" (Ripberger, 2011, p. 79). This is especially true with regard to civil defense and homeland security policy.

Traditional defense policy studies includes questions related, but certainly not limited to, employment of the armed forces, military force structure, chain of command, defense budgets and spending, strategic plans and policy, program

evaluation, research and development, weapons procurement and acquisitions, innovation and logistics, civil-military relations, and personnel readiness. Despite this robust and ever-growing research agenda, however, the public policy field largely ceded questions of traditional defense and national security policy to international relations and security scholars. This was a mistake. Indeed, the frameworks, theories, models, and methods policy scholars bring to bear on these vital issues will make a significant contribution to the discipline's body of defense and national security scholarship.

While international relations purists and policy studies skeptics may be content with this status quo, a public policy approach to defense and national security questions is long overdue in the field. Unlike many international relations scholars who still attribute rationality to unitary actors at the state level of analysis, policy scholars have long forgone such assumptions and embraced bounded rationality (Baumgartner & Jones, 2009; Simon, 1945) and the policy subsystem as a preferred level of analysis (Freeman, 1955; McCool, 1998; Redford, 1969), which includes the actors and institutions that compete over intrastate policymaking processes. Acknowledging this reveals that defense, national security, and foreign policymaking all occur within and between policy subsystems. Although defense and national security policy subsystems are far more insular and less pluralistic than domestic policy subsystems, the construct still applies. For instance, military personnel and pension policies for the roughly 2.2 million active duty, national guard, and reserve service members across the U.S. armed forces are controlled by a "small and insular cabal of actors and institutions" that form an autonomous military personnel policy subsystem (Archuleta, 2015, p. 6).

Understanding and appreciating how competing subsystem actors and institutions within a state manage to generate national defense and security policies is fundamental to addressing these important research questions. This is why the Comparative Agendas Project has managed to gain such traction in the field of comparative politics (Baumgartner, Jones, & Wilkerson, 2011). Simply assuming that a state will choose the utility maximizing, "rational" course of action belies centuries of international history. There should be little doubt, the time has come for policy scholars to rediscover defense policy and rejoin America's national security conversation.

Defining Defense

Any scholarly research note naturally casts a wide net in search of relevant literature. This one is no different. Defining "defense policy" will help focus the scope of this review. Smith and Larimer (2009, p. 75) loosely define public policy as "any deliberative action (or non-action) taken by government to meet some desired end." Naturally, the desired end of U.S. defense policy is to "protect the integrity of [American] democratic institutions and promote a peaceful global environment in which they can thrive" (National Security Council [NSC], 1986, p. 1). Defense policymakers aim to effectively leverage the various instruments of national power—diplomacy,

economics, information, and the military—to ensure American liberty, security, and prosperity. Thus, defense policy is broadly construed as deliberative actions (or non-actions) taken by government to “protect fundamental values” and meet core (and peripheral) national security interests “necessary to the continued existence and vitality of the state” (Jordon, Taylor, Meese, & Nielsen, 2009, p. 4; Nye, 1999). These national interests include defending the homeland, growing the U.S. economy, promoting universal values, and maintaining a liberal international order (NSC, 2015).

Selection Methodology

With this operating definition of defense policy as a guide, policy scholars have paid particular attention to the political institutions and processes that drive defense and national security policy in the United States and abroad over the past several years. For brevity sake, however, this research note places primary emphasis on *American* defense and national security policy.¹ As such, this article reviews works by public policy scholars and moves off the beaten path to include relevant scholarship by international relations scholars, diplomatic historians, and scholar-practitioners as well. Through an institutions and processes framework to structure discussion, this review examines significant contributions to the policy studies literature on defense, national security, and foreign policy from January 2011 to August 2015. Further, an institutions and processes structure offers broad appeal and accessibility for scholars and practitioners of all stripes.²

Beyond structure, judging an article’s relative significance as a criterion for incorporation, whether found in a policy-relevant journal or off the beaten path, begs three simple questions: Based on the aforementioned definition of defense policy, is this author attempting to tell a defense, national security, or foreign policy story? If so, does this article reveal anything new for public policy scholars, especially those who specialize in defense, national security, or foreign policy? If not, does a defense and national security lens at least help explain a broader political phenomenon of interest to policy scholars in general? (See Figure 1 below.) Therefore, this research note excludes articles that only tangentially touch on defense, national security, or foreign policy issues.

With a policy studies focus in mind, the initial search criteria for this review incorporated several policy-relevant journals in pursuit of worthy articles related to the governmental institutions responsible for developing defense and national security policy (i.e., bureaucracy, interests, industry, media, etc.) and the processes by which these institutions craft such policy (i.e., agenda setting, decision making, implementation, evaluation, etc.). This exploration began with the some of the most prominent journals in the policy studies field, including *Policy Studies Journal*, *Journal of Public Administration Research and Theory*, *Review of Policy Research*, *Politics & Policy*, *Public Administration Review*, *American Political Science Review*, and *American Journal of Political Science*, among others. Next, the author expanded the search for relevant scholarship in publications like *Presidential Studies Quarterly*, *Armed Forces & Society*,

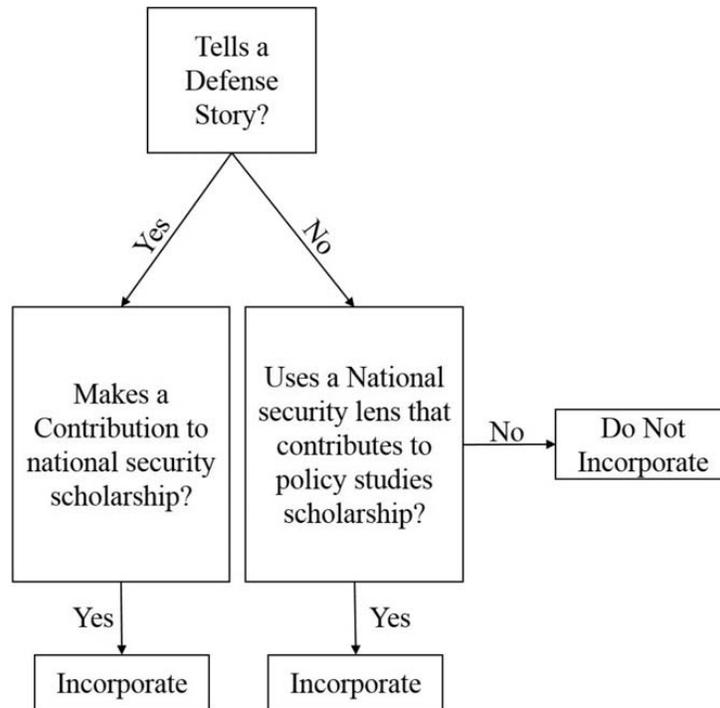


Figure 1. Selection Methodology.

Foreign Policy Analysis, International Studies Perspectives, Homeland Security & Emergency Management, and even recent doctoral dissertations in the field.

This review follows with three subsequent sections. The first section examines journal articles related to defense and national security institutions, including the NSC and Department of Homeland Security (DHS). The second section explores several defense and national security processes, including presidential agenda setting and policy entrepreneurship. The final section of this research note concludes with several ideas for the way ahead in defense and public policy scholarship.

Institutions

Political institutions offer a helpful lens through which to view and understand defense and national security policymaking. But as Ostrom (2007, p. 23) points out, "It is hard to make much progress in the study of institutions if scholars define the term 'institution' as meaning almost anything." Rather than focus on institutions as a socially embedded system of rules or norms that structure individual behavior (North, 1990; Ostrom, 1998; Riker, 1980; Scott, 2001), this review draws from Hodgson's (2006) more inclusive definition that identifies institutions not just as conventions, but also as organizations. In this sense, organizations are special kinds of institutions with additional features, including principles of sovereignty, hierarchical chains of command, and boundaries for membership. With the president's constitutional duty as commander-in-chief, the hierarchical structure of organizations within the defense community, and the sensitive nature of national security policymaking

that includes only a select few, defining “institutions” in the organizational sense is especially appropriate given the topic and scope of this research note.

Bureaucracy

The NSC is often a favorite subject for diplomatic historians, not political scientists. But, recent works by both diplomatic historians and political scientists offer revealing insights for policy scholars interested in the inner-workings of one of the most important national security institutions in America. Nearly 70 years have passed since the NSC first came into being. Pointing to the attacks of September 11, 2001 and the faulty weapons of mass destruction intelligence leading to the disastrous “war of choice” in Iraq (Haass, 2009), a growing chorus of scholars and policy-makers has called for institutional reform within the aging NSC and beyond (Drezner, 2009; Locher, 2008; Miller, 2013). Miller (2013, p. 593) describes recent NSC reform efforts as “piecemeal, haphazard, and patchy, focused on individual agencies rather than systemic reform.” He argues that policymakers would do well to reinstate the long forgotten Eisenhower NSC system, including a Planning Board and Operations Coordinating Board, to more effectively coordinate the interagency planning and implementation processes. This enabled a “highly structured and meticulous” NSC process during the Eisenhower years that has been sorely missing ever since (Miller, 2013, p. 597).

Discounting rational choice and “new institutionalist” explanations popular in the international relations field (Zegart, 1999), Mabee (2011) relies on historical institutionalism to examine the creation (*timing*) and development (*longevity*) of the NSC. As such, the NSC’s statutory purpose is to:

[A]dvise the President with respect to the integration of domestic, foreign, and military policies relating to the national security so as to enable the military services and the other departments and agencies of the Government to cooperate more effectively in matters involving the national security. (Miller, 2013; National Security Act, 1947)

Borrowing concepts from punctuated equilibrium theory, Mabee (2011) argues, “[E]xogenous shocks are crucial in providing the necessary freedom to change existing institutions, which are then set on new contingent paths” (p. 27). Immediately after President Truman signed the National Security Act into law, the nascent NSC set about on a path-dependent course of development. Mabee offers two conclusions. First, the immediate aftermath of the Second World War created a moment in time, or “critical juncture,” whereby major institutional change across America’s national security establishment was possible. Second, the NSC has managed to endure over time as a result of “positive feedback mechanisms” which enable increased presidential power and more effective foreign policy coordination across the interagency (Mabee, 2011, pp. 28–29). These are important points considering modern U.S.

presidents tend to consolidate wartime decision making at the White House in the face of a deferential Congress (Fisher, 2000).

These two pieces on the NSC spur interesting questions regarding bureaucratic information processing that future scholars should consider exploring. Given the sensitive work that takes place within the NSC, institutional structures like coordination boards and interagency planning committees may detrimentally stovepipe information all the way up to the president through the national security advisor, thereby preventing the necessary exchange of classified information across agencies earlier in the process. If this is the case, elite interviews with former NSC staffers may offer insights into how government can overcome these classified stovepipes and distribute information to key stakeholders sooner rather than later.

Policy scholars continue to make impressive inroads into understanding homeland security in the United States. To better understand policy coherence within policy regimes, May, Jochim, and Sapotichne (2011) leverage their work on the U.S. DHS to explore two “boundary-spanning” questions: “What is homeland security? And have policymakers advanced a shared understanding for homeland security?” (p. 285). From terrorist attacks and disaster response to public health epidemics and other crises, the complex realities of the homeland security regime naturally cut across several policy subsystems and are hamstrung by overlapping and competing policy jurisdictions. The authors offer, “We suggest that policy regimes that crosscut elements of different policy subsystems and induce players within them to pursue similar ends—boundary-spanning policy regimes—hold the prospect for overcoming these limitations” (May et al., 2011, p. 290). Regime strength rests on policymakers’ ability to focus attention on a shared vision of homeland security. May et al. (2011) write:

[T]he relevant players in each of the subsystems we consider were largely pursuing separate homeland security agendas that reflect their particular concerns and historic ways of doing business . . . in trying to do too much, little is accomplished in the way of shared purpose, supportive interests, and unified institutions. (p. 302)

Rather than rallying behind the broad concepts of “homeland security” and “all-disaster preparedness,” the authors conclude that the homeland security regime is really quite “anemic.”

May and Koski (2012) continue this research on policy regimes by examining the implementation of homeland security policies through the public-private “communities of interest” responsible for protecting the nation’s critical infrastructures by mobilizing attention and engagement and creating planning partnerships. The authors write, “Planning partnerships are as much about crafting policies and programs as they are about implementing them” (May & Koski, 2012, p. 140). Their analysis finds that the federal government’s planning partnership approach fosters cross-sector collaboration to “pursue common sets of solutions for risk reduction and mitigation” (May & Koski, 2012, p. 154). In related work, May and Jochim (2013,

p. 441) declare, “Stronger communities have a clear sense of their common interests, institutional arrangements for information sharing, and interdependencies that reinforce their shared fate.” Taken together, these findings lend credence to the notion that the bureaucratic planning *process* is often more important than the *plan*.

Interested in questions of public administration in a democratic society, Robinson, Liu, Stoutenborough, and Vedlitz (2012) examine public trust in the DHS. Their research suggests that public trust in DHS is “not driven by the behavior of the agency” (Robinson et al., 2012, p. 728). Rather, trust in DHS stems namely from “political attitudes, policy salience, religiosity, and demographic characteristics, even when controlling for trust in government in general” (Robinson et al., 2012, p. 713). Their findings suggest that public trust in bureaucratic agencies is a new and fruitful area of research for the public policy and administration fields and they encourage others to participate. Interested scholars might extend this research into an examination of the U.S. military as America’s most trusted public institution (Jones, 2011).

Subsequent research by Robinson and Mallik (2015) moves the growing homeland security field from the federal level to the state level by cataloguing the confusing “diversity of definitions” for the term “homeland security.” They find a clear divergence at the U.S. state level with regard to operational and statutory definitions. This presents potential problems for policy scholars studying homeland security and policy practitioners concerned with “interstate” and/or “state-federal” homeland security coordination in the midst of crisis. In other words, “[I]n states where multiple definitions exist, the possibility of confused management and action—such as in the case of the federal response to Hurricane Katrina—remains” (Robinson & Mallik, 2015, p. 78).

While ongoing research into DHS continues to make helpful contributions to the field, policy scholars should note that there were practically no published articles relating to the Department of Defense—the nation’s largest bureaucracy—during the 2011 to 2015 review window. This is both revealing and disturbing. With massive budgets, throngs of people, and reams of data, the Pentagon ought to become a point of focus for policy scholars interested in defense institutions over the next several years. And, lest scholars forget, the armed services and foreign relations committees in Congress serve as policy venues for defense and national security issues. These subsystem institutions also merit scholarly attention.

Interests and Industry

Ever since President Dwight Eisenhower’s 1961 farewell address to the nation warning of the perils of the “military-industrial complex,” a specialized defense industry has been a centerpiece of the American war machine and national security establishment. But beyond bombs and bullets, defense companies also play an important role in postconflict reconstruction. For instance, Witko’s (2011) piece discusses the Halliburton/Kellogg, Brown, and Root restoration of the Iraqi oil infrastructure in 2003–04. He finds that the most important factors in determining the award of a defense contract include campaign contributions, firm reputation, and

past contracting history. In fact, from 1999 to 2002, Halliburton donated some \$2 million in soft money to Republicans and none to Democrats (Witko, 2011, p. 766). Meanwhile, political connections and favoritism can lead to inflated contracting costs, as was the case with Iraq's oil infrastructure.

Like Witko's exploration into the immediate aftermath of the invasion of Iraq, LaPira (2012) uses the post-9/11 creation of the homeland security policy regime to explain the "timing and sequence of interest group mobilization and lobbying activities" (p. 227). No doubt, the terrorist attacks of September 11 mobilized interests groups of all types seeking to contribute to—and profit from—U.S. homeland security. Interestingly, LaPira finds that even after an exogenous shock, well-established interest groups that span various policy jurisdictions only temporarily shift focus to newly formed policy regimes before ultimately returning to their organic policy subsystems. Without meaningful competition, new interest groups are able to emerge and mobilize in order to fill the new policy regime's advocacy vacuum (LaPira, 2012).

Media

From yellow journalism in the Spanish-American War to embedded reporting in Iraq and Afghanistan, wartime media coverage has been a cornerstone of the American way of war for more than a century. Two recent studies offer new insights into the media's role in foreign policymaking and wartime coverage, especially with regard to focusing events and framing. In her analysis on media attention and the policymaking process, Wolfe (2012) finds that increased media attention on policy issues generally "put the brakes" on the policy process by expanding the scope of conflict and slowing legislative debate through negative feedback. Unlike other issues areas (i.e., infrastructure, social welfare, environment, and government operations), Wolfe's data suggest increased media attention actually speeds up the policy process with regard to foreign policy focusing events, including defense and international affairs. She finds this is in line with the foreign policy literature, concluding, "foreign policy issues elevated to the national stage will speed up lawmaking" (Wolfe, 2012, p. 117).

With regard to frames, Boydston and Glazier (2013) employ an original two-tiered method to understand media framing during the War on Terror. Common approaches to media and agenda setting employ either issue-specific frames or generalizable coding schemes. Rather than subscribe to just one, the authors "focus on the benefits that generalizable coding procedures can deliver when utilized in *conjunction with* issue-specific coding procedures" (Boydston & Glazier, 2013, p. 709). To maximize use of their model, the authors rely on a four-pronged framing typology which ties gain-based versus loss-based frames to self-referential versus other-referential frames (Boydston & Glazier, 2013, p. 716). While their analysis reveals a decrease in total media attention to the War on Terror over time, it also "illustrates the importance of events in influencing frame selection: 9/11, the deployment of troops to Iraq, and the breaking of the Abu Ghraib scandal" (Boydston & Glazier, 2013, p. 717). More interestingly, media frames shifted from loss-based following 9/11 to gain-based during the nation building counterinsurgency effort in Iraq. Loss-

based media frames prevailed early on but dissipated over time. Similarly, the media also relied on self-referential frames early in the war. This speaks to the “inward focus” Americans felt following 9/11. “Yet,” the authors conclude, “self-referential frames also decline over time. As the war wore on, the media began to report on the war from different angles, including ones that took into account the impact on other countries and citizens” (Boydston & Glazier, 2013, p. 721).

Advocacy Coalitions

A special 2011 issue of *The Policy Studies Journal* celebrated a quarter century of Paul Sabatier’s Advocacy Coalition Framework (ACF). This issue included two articles worth noting here for their relevance to U.S. foreign policy. In the first article, Pierce (2011) applies the ACF beyond environmental and domestic policy to U.S. foreign policy—an important and welcome step forward in the ACF literature. In his research on the creation of Israel, Pierce uses the ACF to better understand belief systems and coalition stability over time by exploring deep-seated political conflict between Jews and Arabs in Palestine from 1922 to 1949. Leveraging a mixed-methods approach, Pierce makes three findings. First, advocacy coalition structures—the lineup of allies versus opponents—remains “relatively stable over time” (Pierce, 2011, p. 430). Second, among the three advocacy coalitions in question—pro-Zionist, anti-Zionist, and pro-Arab—new policy core beliefs “emerge over time as changes to the subsystem made them more salient among coalition members” (Pierce, 2011, p. 430). Third, the convergence of multiple belief systems within a single advocacy coalition may signal future policy change. Extending Pierce’s analysis beyond Israel–Palestine, this sort of work also suggests that with so many international issues galvanizing groups of like-minded people to take action, the ACF could potentially offer a helpful construct to study and understand other hotly contested political movements around the world, including Kurdish nationalism in Iraq, Iran’s Green Revolution, and even the Arab Spring.

While the focus of this review article is primarily American in scope, the second ACF article of note is Nohrstedt’s (2011) piece on Swedish signals intelligence policy. Nohrstedt adds an important comparative defense policy perspective that is worthy of inclusion here. His case examines the National Defense Radio Establishment (NDRE) responsible for all Swedish cross-border signals intelligence. This issue is a perfect candidate for an ACF analysis; “it is technologically complex and politically controversial” (Nohrstedt, 2011, p. 466). He contends that the factors that led to major intelligence policy reform in 2009—changes in NDRE responsibility from mere military communication to all cross-border cable traffic—included shifts in coalition resource distribution and access to new policy venues. First, Nohrstedt (2011) finds, “[R]edistribution of political resources within a subsystem increases the likelihood for major policy change” (p. 473). Second, “opening new policy venues is a factor that can explain policy change” (Nohrstedt, 2011, p. 479). Taken together, Pierce and Nohrstedt’s articles are important ACF contributions to the foreign policy and comparative defense policy subfields.

Processes

Studying public policy requires an inherent appreciation for the complex and unstructured nature of the policymaking process. Indeed, the policy studies literature is full of helpful frameworks, theories, and models that bring ordered explanations to the policy process. Among these is stages theory, an approach the field has long since dismissed as a mere heuristic (Sabatier, 2007). While the stages heuristic is rightly criticized for incorrectly portraying a linear approach to the policymaking process without acknowledging the potential for feedback loops (deLeon, 1999), Smith and Larimer (2009, p. 32) acknowledge, “The common patterns [in the evolution of stages theory] all portray public policy as a continual process, one where problems are never solved, they are only addressed.” Recurring national security problems are rarely solved; they are merely addressed time and time again. As such, this section relies on a simple outline of the oft-cited stages heuristic to guide the following discussion—“usually agenda setting, policy formulation and legitimation, implementation, and evaluation” (Sabatier, 2007, p. 6).

Agenda Setting

Beyond traditional studies of presidential attention and policy tools, Larsen-Price (2012) examines the varied use of presidential policy instruments (i.e., presidential messages, administration hearings, executive orders, and amicus briefs) to understand how presidents allocate their limited attention across issue domains to address crises and further their policy agendas. In fact, no single policy tool dominates presidential response to defense and foreign affairs. Rather, the president uses policy instruments like administration hearings and executive orders in conjunction with a heavy reliance on presidential messages to address attention spikes on matters of defense and foreign affairs (Larsen-Price, 2012). This is especially interesting considering the president’s typically steady attention to defense and foreign policy as commander-in-chief. Of course, the president works with Congress to shape defense policy. But, this steady attention to defense, among other issues, “indicates that it is the president who leads in setting the domestic agenda” (Rutledge & Larsen-Price, 2014, p. 459). However, presidential agenda-setting stops at the water’s edge. According to their study, Rutledge and Larsen-Price find that “international affairs is the only area in which the president responds to increased congressional attention with an increase in attention.” They posit this increase in presidential attention protects the commander-in-chief’s jurisdiction from congressional encroachment.

Policy Formulation: Policy Entrepreneurs Shape Decision Making

Over the past several years, there has been quite a bit of impressive research examining the role of influential policy entrepreneurs in shaping national security decision making. Individually, these works shed new light on important national security decisions like the Iraq invasion and the Afghan surge. Collectively, these

works create an interdisciplinary crossroads where political science, history, and biography can all come together and bring the policymaking process to life. No doubt, this is an important development in the literature.

Policy entrepreneurship is an important, yet understudied and underappreciated, component of the national security policymaking process (David, 2015). The Multiple Streams Approach (MSA) emerged in response to the garbage can model of institutional decision making whereby solutions often search for problems (Cohen, March, & Olsen, 1972). MSA holds that policy entrepreneurs rise to prominence to combat these “organized anarchies.” They are power brokers with the requisite access and resources to manipulate the problem, policy, and politics streams of an issue—through an appropriate policy window—to successfully generate policy change (Baumgartner & Jones, 2009; Kingdon, 1995; Smith & Larimer, 2009; Zahariadis, 2014). But, in his recent review of the policy entrepreneurship literature, Zahariadis (2014, p. 46) laments, “[P]olicy analysts systematically neglect the area of foreign policy.” Closing this gap in the literature will help policy scholars “get inside” and better understand the complex national security policymaking process.

David (2015) addresses this systematic neglect in his examination of national security policy entrepreneurship during the George W. Bush administration. He writes, “In studies relating to national security, entrepreneurs are usually defined as decision makers who are able to reorient policies according to their perceptions and win majority acceptance for their positions.” Naturally, these entrepreneurs “are alert to opportunities, they frame the agenda (define the problem and the solution), they organize coalition building, they influence the public and private debate, and they act” (David, 2015, p. 165). Through two extensive case studies, David argues that Vice President Dick Cheney’s policy entrepreneurship, in particular, deserves much of the credit (and/or blame) for the decision to invade Iraq and the legal redefinition of torture during President Bush’s first term from 2001 to 2005. Positioned atop America’s national security establishment, Cheney and his compatriots in the administration “were successful because they manipulated the policy process so that the decisions reflected both their cognitive preferences and bureaucratic influence” (David, 2015, p. 185).

Beyond the decision to invade Iraq, President Bush’s 2007–08 Iraq troop surge is easily one of the most consequential foreign policy decisions of the post-9/11 era (Marsh, 2012a). Kevin Marsh “employs a bureaucratic politics model” to assess the role surge advocates and opponents played in President Bush’s decision making process (Marsh, 2012a, p. 414). Any close observer of U.S. national security policy could attest to the fact that bureaucratic politics play at least some role in presidential decision making. But, Bush’s decentralized management style—heavy on vision, light on details—exacerbated this reality. Marsh (2012a) writes, “The president’s prolonged detachment from details and the formulation of policy options allowed for advisers to compete politically in an attempt to persuade the president to adopt their particular policy preference” (p. 433). Bureaucratic politics absolutely played a key role in President Bush’s decision to surge troops in his effort to reverse the deteriorating war effort. Marsh continues this line of research with parallel work applying the same bureaucratic politics framework, hypotheses, and model to President Barack

Obama's decision to surge troops in Afghanistan from 2010 to 2011. He concludes, "[T]he final outcome in the Afghanistan surge case was an example of a political compromise and the product of political pulling and hauling . . . the final strategy represented a lopsided compromise as the president's new strategy far more resembled the policy preferences of surge advocates than those of surge opponents" (Marsh, 2014, p. 284).

Clearly, policy scholars have played an important role in evaluating and explaining some of the most important national security and foreign policy decisions and events in modern history. Redd and Mintz (2013) present a comprehensive review of the works on decision making in the policy studies literature as related to national security and foreign policy. The authors discuss several theories and models, including rational choice, cybernetic model, prospect theory, poliheuristic theory, organizational and bureaucratic politics, groupthink and polythink, analogical reasoning, applied decision analysis, and biased decision making. While their work indicates that rational choice theory is the point of comparison for most studies in the field, it is also the point of departure that takes the field in very different directions. As a result, the authors speculate, "Perhaps these considerations help to explain the diversity of decision-making theories and the lack of a central theme in how they are applied to real-world events" (Redd & Mintz, 2013, p. S30). They conclude by suggesting that future work on national security and foreign policy decision making should apply multiple theories to single events in order to maximize explanatory power. Studies like this would fall in line with Allison's (1969) "seminal approach" to the Cuban Missile Crisis and surely make significant contributions to decision making's well-trod, but still fertile, field.

Beyond decision making itself, similar works on policy entrepreneurship highlight former National Security Advisors Brent Scowcroft and James Jones for their ability to steer (or inability to steer) national security policy from the White House. In a seminal biography, Bartholomew Sparrow (2015) depicts Brent Scowcroft—a West Point graduate and retired Air Force lieutenant general—as a skilled bureaucratic tactician, faithful policy entrepreneur, and wise grand "strategist" during the Gerald Ford and George H. W. Bush administrations. Scowcroft effectively managed the complex interagency national security policymaking process from the West Wing by fostering a close relationship with the president, serving as the administration's "honest broker" through accurate portrayals of the issues, and structuring the president's decision making, especially in a time of crisis. As a result, Scowcroft endeared himself to the nation's foreign policy elite and became the most important national security figure of the twentieth century that most Americans have never heard of.

James Jones—a retired four-star general and former commandant of the Marine Corps—was heralded by the foreign policy community as having the professional experience necessary to effectively manage the same complex interagency national security policymaking process as Scowcroft had done years before. "Yet, for all the initial promise," Marsh (2012b) notes, "James Jones would become one of the weakest and most isolated [National Security Advisors] since the creation of the NSC in 1947" (p. 828). In short, Jones simply managed NSC operations, neither coordinating the interagency process nor generating meaningful policy options for the

administration. What is more, Jones, an administration outsider, never developed the sort of close relationship with President Obama necessary to guide the new commander-in-chief's decision-making process (Marsh, 2012b). Effective national security decision making is paramount for a global hegemon like the United States. This undertaking is so important in fact, some colleges have begun offering semester-long simulation exercises replicating the NSC process and fostering the next generation of national security leaders (DiCicco, 2014).

Policy Implementation

Implementation studies are among the most informative, yet difficult, for scholars to conduct. First, like the policy process itself, implementation is iterative and without end. Where is one to begin? Second, measuring implementation "success" or "failure" often requires a normative judgment that policy scholars can be loath to render. This is tied to the third point: policy implementation yields not just short-term *outputs* but also long-term *outcomes*. Thus, context and policy environments matter. Today's success can be tomorrow's failure and vice versa. The best implementation studies offer a thorough understanding of the implementation process as it played out on the ground, where street and mezzo-level bureaucrats adopt, administer, adjust, and often fail (Pressman & Wildavsky, 1973).

Scholars hoping to contribute to a deeper understanding of policy implementation for the "fourth generation" (Smith & Larimer, 2009) ought to look for ways to incorporate the sort of qualitative, field-based research that policy scholars have recently been calling for (Goertz & Mahoney, 2012; Jones & Baumgartner, 2012). Complementing the extensive quantitative work already in this area, in-depth single-case or comparative-case studies will help bring the policy implementation process to life. This is exactly what Brook and King (2011) do in their examination of the failed the National Security Personnel System (NSPS) during the George W. Bush administration.

Following the attacks of September 11 and in the midst of the run-up to war in Iraq, Secretary of Defense Donald Rumsfeld charged the Undersecretary of Defense for Personnel and Readiness, Dr. David Chu, with transforming the Pentagon's civilian personnel system to include more flexible starting salaries, performance pay, extended probationary periods, academic and term appointments, and sabbaticals, among other features (Brook & King, 2011). The Bush administration managed to exploit overlapping committee jurisdictions to muster enough congressional support to enact the NSPS through the 2004 National Defense Authorization Act in the name of national security. However, policy reform takes on an unpredictable life of its own after enactment (Berry, Burden, & Howell, 2009; Patashnik, 2008). The authors find that the NSPS implementation process was marred by a lack of transparency with labor unions, problematic interagency collaboration between the Department of Defense and the Office of Personnel Management, rigid timelines, aggressive execution schedules, and a series of law suits. Once the NSPS' last remaining proponents left office (i.e., Rumsfeld and Chu), the Obama administration ultimately halted and

repealed the controversial program in 2009. The authors conclude, “[P]roponents of future reform might consider . . . [developing] a proposal collaboratively and present Congress with a detailed reform plan that can be debated and amended with the participation of all stakeholders” (Brook & King, 2011, p. 906). Although simple enough, common-sense implementation strategies like this seem to be the exception, not the rule, in government.

Policy Evaluation: Blue Ribbon Commissions

Policy studies evaluating the inputs, outputs, and outcomes of various public policies are fairly common in the field. These evaluation studies offer especially helpful insights vis-à-vis policy efficacy and target populations. While policy evaluation is and ought to be an internally driven subsystem process, the most effective policy evaluations often come by way of external subsystem bodies—that is, blue ribbon commissions. By definition, blue ribbon commissions are independent and bipartisan in nature and comprised of government and nongovernment officials of “significant stature” (Tama, 2011b, p. 136). Despite the popular view that blue ribbon commissions are merely exercises in futility, scholars have recently shown them to be particularly effective institutional venues for policy change in the realm of defense and national security (Archuleta, 2015; Tama, 2011a, 2011b; Zegart, 2004). For instance, using an original data set, Tama (2011a, p. 71) finds, “[S]tatistical analysis indicates that national security commissions are much more likely to influence policy when they are formed in response to crisis, established by the executive branch, or given a narrow mandate.”

In one of the definitive accounts of the 2006 Iraq Study Group, Tama (2011b) posits, “[T]he distinct political credibility of commissions can enable them to shape public opinion and drive policy change” (p. 135). Using a case study approach, he finds that the Iraq Study Group’s effectiveness stemmed from its postcrisis charter, internal consensus, bipartisanship, unanimity, and influence on public opinion. Tama (2011b) argues that the Iraq Study Group’s thorough evaluation process and final report indicating a “grave and deteriorating” situation in Iraq pressured the Bush administration to shift gears and initiate a new counterinsurgency strategy with a temporary surge of 20,000 troops (p. 146). Unanimous commission reports of this sort establish blueprints or “focal points” for postcrisis policy change and organizational reform (Tama, 2014). Defense policymakers looking to “kick the can” and avoid action should take note: blue ribbon defense commissions can, and often do, usher in policy change.

Forging the Way Ahead

This research note has sought to highlight the most interesting and relevant work on defense and national security in the public policy field over the past several years. While many of the articles cited in this review explore specific questions of defense and national security, many others explore much broader questions about

political institutions and processes, simply using defense and national security as a lens through which to view larger political phenomena. Both approaches prove quite useful in informing policy scholars and policy practitioners alike. Before offering any final thoughts, this concluding section follows with a series of potential defense and public policy research topics worthy of consideration for future scholarly agendas, to include defense management and budgets, military social policy, and cyber bureaucracy.

Defense Management and Budgets

Managing the Pentagon's vast, yet shrinking defense budget has been and will continue to be a significant challenge for national security policymakers (Carter, 2009; Friedman & Logan, 2012; Schake, 2012). As bloated Pentagon procurement programs and escalating personnel costs crowd out money for the personnel training and unit readiness necessary to meet future threats, defense policymakers cannot shift their attention between all the problems in the Pentagon fast enough. For example, former Secretary of Defense Robert Gates writes, "Even though the nation was waging two wars, neither of which we were winning, life at the Pentagon was largely business as usual when I arrived" (Gates, 2014, p. 115). This begs the question, how do combat-related focusing events and policy tragedies (Carpenter & Sin, 2007) speed up or slow down the Pentagon's sluggish bureaucratic processes, especially with regard to procurement and acquisitions policy? Punctuated equilibrium theory offers a useful set of tools to study the impact of exogenous shocks on static and entrenched bureaucratic processes.³

Military Social Policy

For all its organizational focus on war fighting, the U.S. military is also one of the nation's largest social services providers. With a "deserving" social construction (Schneider, Ingram, & deLeon, 2014, p. 111), the American military is arguably the most socialized institution in the country. Military social policy is understudied, underappreciated, and ripe for review by scholars interested in democratic policy design and the distribution of benefits and burdens in society. From food stamps and day care to pensions and health care, lawmakers have understandably been more than willing to provide wrap-around social services for the 1 percent of Americans who serve in harm's way and bear the physical, social, and emotional burdens of war. Service members offer a well-defined, socioeconomic microcosm of society for scholars to easily zero-in on.

Beyond social programs, the Department of Defense continues to wrestle with racial and gender equity. Two potential topics of interest come to mind. First, with the size of the military drawing down, recent reports indicate that African American personnel are *overrepresented* in the group of officers receiving pink slips. What is more, African American officers are *underrepresented* in the general officer ranks (Brook, 2015). While military sociologists have offered thoughts on why this might

be (Moskos & Butler, 1997), few scholars have bothered exploring the bureaucratic and cultural preferences that structure military promotions and separations. Second, although three women shattered a glass ceiling by graduating from the elite U.S. Army Ranger School in 2015, sexual harassment and assault in the ranks remain significant issues for the uniformed culture and bureaucracy to overcome. While the Pentagon has fielded several programs and surveys to better understand the root of the problem, mixed-method policy implementation studies offer the perfect means by which to chip away at this complex issue.

Building a Cyber Bureaucracy

Like the DHS in the years after 9/11, the cyber defense community is rapidly growing at every level of government. Similar to May and Koski's (2012) aforementioned work on critical infrastructures, cyber defense spans the public and private sectors. One need only look to the 2014 Sony Pictures hack to see the military implications of an attack on a vital private sector entity in the United States. As the Pentagon stands up cyber units across the military, there is the potential danger that interservice rivalry plagues the entire enterprise. Public policy and administration scholars should apply a policy regime and subsystems lens to the burgeoning cyber bureaucracies across the services to understand how differences in organizational mission, structure, and policy coherence contribute to, or detract from, jurisdictional encroachment across competing military bureaucracies.

Final Thoughts: A Public Policy Call to Arms

Policy scholars have largely been silent on traditional defense and national security questions not necessarily for want of interest or lack of available data. Rather, policy scholars have been silent because of the norms and structures that make up political science as an academic discipline. International relations and security studies scholars have been rewarded for their defense-related research for decades. Consequently, doctoral students drawn to defense and security questions have naturally matriculated into the international relations field where they can explore these issues freely. Meanwhile, policy scholars have largely focused their work on questions of domestic policy and politics as the burgeoning public policy field has been treated as a mere subfield of American politics. As political science departments continue to introduce proper public policy fields into their programs and bring about greater parity in the discipline, students interested in defense and security will have a public policy alternative (or complement) to the international relations field. Policy scholars must maintain this momentum.

In closing, the public policy field has no doubt expanded its scope of interest in U.S. defense, national security, and foreign policy since this journal's last research note on the subject. This recent defense scholarship in the policy studies field should be cause for hope that the structural tides are finally turning and policy scholars are rejoining America's national security conversation. But, there is still much to do. For

too long, policy scholars ceded national security questions to colleagues in other fields. But, it is not too late to reverse course and make significant contributions to the study and practice of defense and national security policy. The stakes are simply too high for policy scholars to sit on the sidelines.

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Notes

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1. Much of the scholarship relating to comparative defense and national security policy from 2011 to 2015 comes from the field of international relations. While informative, most of these works were of limited utility given the policy studies nature of this review.
2. An alternative means for structuring discussion might be to separate articles out along theoretical lines (e.g., PET, policy diffusion, etc.). While this might be useful for policy scholars, it would likely render the article less accessible to external audiences, that is, international relations scholars, diplomatic historians, and defense practitioners.
3. Secretary Gates's rapid fielding program for Mine-Resistant Ambush Protected vehicles (MRAPs) presents an interesting case study for scholars interested in PET and bureaucracy.

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More than the Affordable Care Act: Topics and Themes in Health Policy Research

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As debates in industrialized countries over the last century indicate, health care and the role of government in its provision are complex and contentious issues. This article provides an orientation to the variety of topics guiding research and discourse in U.S. health policy, as well as how those topical areas influence and engage each other. This paper introduces five prominent themes in health policy research, namely (i) biomedical policy, (ii) public health policy, (iii) health economics, (iv) health care policy, and (v) health informatics policy. It also provides specific examples from current scholarship. Broad themes that connect those lines of inquiry are highlighted with recommendations for future research.

KEY WORDS: biomedicine, public health, health care, health economics, health informatics

Introduction

Since its passage in 2010, the Affordable Care Act (ACA) has dominated mainstream discussions of health policy in the United States. News outlets regularly run stories about health insurance cost and coverage implications for residents (e.g., Danish, 2013), constitutionality of insurance exchange subsidies (e.g., Ehrenfreund, 2014), the individual mandate (e.g., Rau & Appleby, 2012), implementation of Medicaid expansion and basic health plans (e.g., Richert, 2013), and the law's broader implications for spending and cost containment (e.g., Reuters, 2014).

The ACA was developed in part around the triple aim framework for improving the health-care system in the United States (McDonough, 2014). The "triple aim" refers to improving the patient experience of care (access and quality), reducing per capita costs of health care, and improving the health of populations as a national health care system strategy (Institute for Healthcare Improvement; Berwick, Nolan, & Whittington, 2008).

However, while the ACA is commonly referred to as *health reform*, the policy decisions codified in the legislation are predominantly focused on health insurance coverage and health care payment reform, rather than reforms aimed directly at improving health outcomes in the population. The major provisions of the law—

expansion of Medicaid, establishment of health insurance exchanges, the mandate that individuals carry health insurance, insurance plan benefit requirements, and a range of tax changes and cost containment activities—revolve around access to health care through insurance coverage and efforts at minimizing costs (Affordable Care Act, 2010). Pilot programs in care management in Medicare and Medicaid and the establishment of the Community-based Collaborative Care Network Program, which are intended to provide incentives to improve the quality of care for individuals, are generic and receive less administrative attention. Comparatively, provisions that relate to improving the health of populations have received less attention in public discourse about the law, as well as far less funding than coverage and cost-containment activities. Population health provisions include nutritional labeling in chain restaurants, funds for community health centers and disaster preparedness, and the allocation of Community Transformation Grants. While the largest gains in health in the United States in the last hundred years have been made through public health and infrastructure improvements, prevention efforts continue to struggle for equal footing in policy actions (McGinnis, Williams-Russo, & Knickman, 2002). Cuts to the ACA's Prevention and Public Health Fund serve as one example of this neglect (Weisman, 2014).

Health policy pertains to more than health insurance standards and the economics of insurance markets and clinical care. It is also more than a single piece of legislation, however influential it might be. Health policy is about the collective moves made to define societal health objectives and how to achieve them. Creating health policy includes the identification of goals, decisions about the environments in which health and disease develop, the allocation of resources among social systems and health objectives, and the dynamics of values and interests that dominate those decisions.

An overview of health policy that focuses solely on questions of health-care coverage and payment arrangements would draw a shade over other robust and active topics within this subfield of policy studies. Thus, this essay first offers an orientation to health policy that includes and goes beyond trends in health insurance reform. Five lines of inquiry in health policy are identified: biomedical policy, public health policy, health economics, health care policy, and health informatics policy. Current examples of specific policy questions are summarized to further describe the work undertaken within each domain. Next, underlying themes connecting the domains of health policy research are proposed. These themes suggest that professional engagement in health policy—whether as an academic or as a practitioner—is embedded in broader social contexts and value negotiations. The essay concludes with a discussion of opportunities for future research and advancements in the subfield.

A Map of Topics in Health Policy

Meaningful engagement with the field of health policy requires an understanding of the variety of questions motivating research and discourse. It is interdisciplinary, shaped by a range of perspectives, methods, and values as they relate to

informing collective and individual decisions about the management of health and disease in society. Topics in health policy research can be understood in terms of health science (biomedicine and public health), health economics, health-care services, and health informatics. While peer-reviewed journals indeed serve as the home of much of the scholarship in these topical areas, applications of such research (often funded by foundations such as the Commonwealth Fund or the Kaiser Family Foundation) also contribute to research and practice. Additionally, informed commentary appearing in journals (e.g., *Milbank Quarterly* and *New England Journal of Medicine*), professional associations (e.g., the AcademyHealth Blog), and popular media (e.g., *The New Yorker*, *The Upshot* in *The New York Times*) plays an important role in health policy discourse.

Figure 1 describes the interconnected and overlapping relationships among the major domains of health policy research. It also identifies several underlying themes across the domains, which are discussed later in this essay.

Biomedical Policy

Biomedicine pertains to the application of the natural sciences, particularly biology, to the study of medicine (Venes, 2005). The biomedical model contrasts with more traditional—often referred to as *alternative* or *complementary*—medical practices whose origins are not born of the application of the scientific method to conditions and interventions in controlled settings. The biomedical model and its disease-oriented approach to health care dominates the U.S. system, a system that has been referred to as a “sick care system” rather than a “health care system” (e.g., Fani Marvasti & Stafford, 2012; Levi, 2013; Menino & Johnson, 2012).

While biomedical science may appear to be isolated to scientific findings in the laboratory, it is shaped by questions of how such research is funded, conducted, and how findings are translated from the laboratory to clinical settings. These sorts of collective decisions represent one domain of health policy research: biomedical policy. *Biomedical policy* refers to how biomedical evidence is developed and institutionalized into standards of care.

One example of biomedical policy is the recent debate over Right to Try laws, which would enable terminally ill patients to access experimental treatments (including drugs, biologics, and devices) not yet approved by the Food and Drug Administration (FDA). Proponents of such laws, including the libertarian Goldwater Institute, argue that terminally ill patients who have exhausted standard courses of care face undue barriers to accessing novel treatments that have not yet cleared the lengthy FDA approval process (Servick, 2014). The process proposed in Right to Try legislation requires only that a treatment have passed initial safety tests (i.e., Phase I of clinical trial), and that a patient get approval from the drug company and a recommendation from a physician. Such legislation has gained popularity among some legislators and patient advocates—as of June 2015, 21 states have Right to Try laws on the books—but the biomedical community, as well as federal legislators and administrators, have largely not been supportive (Dresser, 2015).

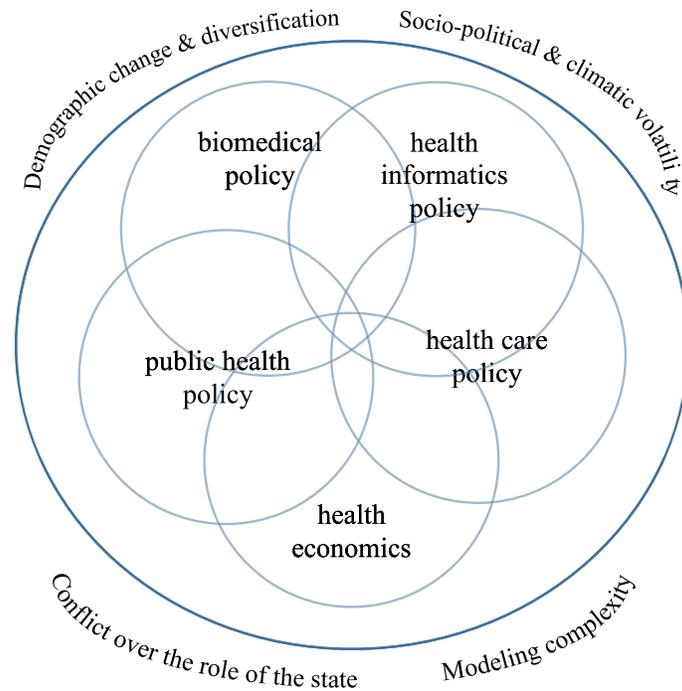


Figure 1. Health Policy Research Domains and Connecting Themes.

The FDA already grants “compassionate use” exemptions for patients with life-threatening conditions and without comparable alternative treatments. Unlike the Right to Try process, compassionate use exemptions preserve the FDA as a gatekeeper on the use of experimental treatments. Right to Try critics contend that the FDA process is important for both patient safety and public health; circumventing that process undermines federal law and the drug approval process (Begg, Kim, & Neaton, 2014; Farber, Pinto, Caplan, & Bateman-House, 2015). In addition to the possibility of individual patient harms, removing the FDA from the decision-making process could lead to off-label usage of unapproved treatments (Servick, 2014). Furthermore, even with a change in process rules, patient access to novel treatments would not be guaranteed due to the lack of incentives for insurers and manufacturers to cover the cost of care (Dresser, 2015; Farber et al., 2015; Servick, 2014). Still, while scientific consensus suggests that Right to Try processes are a net loss, broad values of patient choice keep them a viable policy option (Dresser, 2015).

The development, application, and alterations to preventive screening practices are another matter of biomedical policy. In 2009, the United States Preventive Services Task Force (USPSTF) released recommendations against regular mammograms in women younger than 50 (i.e., mammograms were not given an “A” or “B” rating, but instead a “C” rating, which advises clinicians to use individual context regarding risk and preferences to inform their recommendation; USPSTF, 2015). There has been a backlash to these recommendations, in part because efforts to make them more transparent by publishing them online for public comment has increased visibility in the media and lay community (Moyer, 2013). This has opened the door to criticism that the recommendations effectively ration care because of the reimbursement

implications of Task Force ratings: The ACA requires Medicare and qualified health plans to cover preventive services with a grade of A or B, though it does not prohibit coverage of services with lower ratings. Ratings may be preempted by legislative action, as for the prostate-specific antigen (PSA) test in Medicare. Concerns over implications for individual treatment, as well as criticism of the composition and decision-making process of the Task Force (see Carroll's [2011] reaction to that commentary) impose additional burden on providers, who must field questions about the recommendations, despite not being compensated for time spent doing so. Such costs may be one reason that Pollack, Noronha, Green, Bhavsar, and Carter (2012) find that many physicians do not plan to change their practice regarding referral for a PSA test.

The 2009 USPSTF recommendations are based on evidence that mammography does not reduce mortality for most women (Elmore & Kramer, 2014) and that its net benefit is largely tied to the patient's baseline risk (Pace & Keating, 2014). Bleyer and Welch (2012) find that increased use of mammography has resulted in broad overdiagnosis of breast cancer, a concern when considering the potential harms associated with screening, such as getting a false positive result (Melnikow, LeFevre, Wilt, & Moyer, 2013). Similarly, Qaseem, Barry, Denberg, Owens, and Shekelle (2013) find that potential harms of the PSA test outweigh the benefits for most men. Yet there is no consensus on the foundational science underlying the recommendations themselves. For example, in 2013, Etzioni et al.'s model-based approach led the authors to conclude that prostate cancer screening benefits outweigh harms, but Melnikow et al. (2013) maintained that the recommendations drew on evidence from randomized controlled trials (RCTs), the gold standard for clinical research.

Evidence-based medicine is embedded in precisely this challenge of moving from RCTs and clinical evidence, to general guidelines for diverse practice settings, to discrete decisions for individual patient care. That care should be practiced according to the best evidence seems an undeniable value. However, care must be considered in the face of interpretation of that evidence. Wegwarth, Schwartz, Woloshin, Gaissmaier, and Gigerenzer (2012) find that even medical experts are not particularly good at interpreting evidence from clinical trials about the benefits of cancer screening. The need to provide a check on individual human interpretation through formalized evidence-based processes (such as clinical practice recommendations and guidelines) and the protection of those processes is at the heart of Begg et al.'s (2014) criticism of Right to Try laws, for example. However, evidence-based recommendations do not go unchecked themselves, as recent Congressional action (HR2029) to require the Department of Health and Human Services to use the USPSTF's 2002 recommendations for mammography demonstrates (Young, 2015). RCTs may remain the gold standard of clinical evidence, but biomedical policy deals in the interpretation, translation, and values about both collective and individual decision making regarding that evidence.

Public Health Policy

Public health is concerned with preventive measures intended to improve the health of communities (Venes, 2005). It refers to all organized measures, whether

public or private, to prevent disease, promote health, and prolong life among the population as a whole (WHO, 2015). Public health practice traditionally includes health and disease surveillance, as well as health promotion through behavioral, community, and environmental interventions. In contrast to biomedicine and medical practice, the science and practice of public health is primarily focused on health phenomena and interventions at the population level.

The community focus of public health is exemplified by the rise of the social determinants of health as a key concept in understanding public health dynamics. *Social determinants of health* refers to the conditions in which people are born, grow, work, play, live, and age, and the set of institutional forces and systems within which those activities occur (Healthy People, 2015a; WHO, 2015). The fundamental contribution of this concept in public health research and practice is that it emphasizes the social context within which patterns of health and disease develop. Social determinants, combined with genetics, individual risk factors, and specific health-care interventions, provide a more complete picture of human health.

Rather than treatments, public health research seeks to identify mechanisms for the prevention of disease and preservation of health within populations. *Public health policy* revolves around questions of what those mechanisms look like and how surveillance and promotion of health occur. Because many determinants of health are social, public health policy is influenced by, and has implications for, environmental policy, city planning, transportation, health care, education, and occupational standards, to name a few.

One public health policy question that continues to be of particular importance involves requirements and exemptions for childhood vaccinations. Despite being considered one of the top ten public health achievements of the twentieth century (CDC, 1999), immunizations—more precisely, their requirement among children—continue to be the subject of debate. Much of this debate stems from the now discredited and retracted Wakefield et al. (1998; retracted 2010) *Lancet* article claiming a link between the measles-mumps-rubella (MMR) vaccine and autism in children. Despite extensive research that fails to show any association between the MMR vaccine or its components and autism (e.g., Clayton, Rusch, Ford, & Stratton, 2012; DeStefano, Price, & Weintraub, 2013; IOM, 2011; Taylor et al., 1999), Wakefield and his work still have a tremendous following (Dominus, 2011). Celebrities and political figures (e.g., Michele Bachmann, Dr. Rand Paul) continue to provide recognizable public faces for the movement to roll back vaccine requirements and expand exemptions in the name of personal choice. A 2012 *Morbidity and Mortality Weekly Review* report found that vaccine coverage of children was down and refusals up (CDC, 2012). The same report noted that 2011 marked the highest number of measles cases in the United States since 1996.

Thus, while the safety and efficacy of the MMR vaccine is scientifically well established, public health policy must continue to engage disparate attitudes and values on vaccination practices. The prevention of outbreaks relies on high rates of vaccination in the population to maintain herd immunity, making requirements vital to stifle the incidence and spread of infectious disease (Carroll, 2012). One effort to increase vaccination rates involves increasing public trust in the science of

vaccination and debunking myths (Ozawa & Stack, 2013), but attention to the role of exemptions (i.e., the conditions under which they should be allowed) is also important. Those who call for an end to all but medical exemptions (e.g., Dell'Antonia, 2015) have seen a recent victory in Vermont, which has removed all philosophical exemptions, the largest source of that state's vaccine refusals (medical and religious exemptions remain intact) (Specter, 2015). California has passed a stricter vaccination law that allows for medical exemptions only (Perkins, 2015). Lillvis, Kirkland, and Frick (2014) find additional evidence that legislation loosening vaccine requirements is waning. But the frames of personal freedom and parental choice remain a challenge to meeting public health prevention objectives in child health and infectious disease control.

Another significant topic in public health policy is what can and should be done to address health disparities. *Health disparities* are health differences that are closely linked with social, economic, or environmental disadvantage. Health disparities systematically and adversely affect groups that have experienced greater obstacles to health due to historical discrimination or exclusion, such as those based on race, ethnicity, religion, gender, or sexual orientation (Healthy People, 2015b). As Beal (2013) points out, public health has gone through a robust phase of chronicling health disparities (see Kershaw, Osypuk, Phuong Do, De Chavez, & Diez Roux, 2015, and Piccolo, Duncan, Pearce, & McKinlay, 2015, for recent examples of neighborhood-level effects), and now turns its attention to what interventions work to address those disparities. Research on disparity reduction and health promotion among low-income workers (Baron et al., 2014) and best practices for health-care organizations in reducing health disparities (Chin et al., 2012) represent important work in this vein.

In addition to the descriptive foundation provided by *Unequal Treatment* (Nelson, Smedley, & Stith, 2002), the seminal report by the Institute of Medicine (IOM), research in health disparities highlights the potential for improvement through health-care workforce diversity and representativeness (e.g., Iglehart, 2014) and integrating reduction of disparities as an objective into other public service domains, such as city planning (Lemon et al., 2014). Moving health equity objectives into seemingly health-unrelated policy domains such as transportation, planning, education, economic development, and energy is the driving force behind the movement for "health and equity in all policies" (see the American Public Health Association, the Prevention Institute, the Robert Wood Johnson Foundation, the CDC, and WHO for more information). The motivation behind this work is distilled nicely by Braveman et al. (2011): Addressing health disparities and building health equity matters for social justice.

Like evidence-based medicine, evidence-based public health is embedded in a struggle to reconcile the field's scientific findings with matters of practice and diverse values within the community.¹ The Community Preventive Services Task Force (CPSTF) is the counterpart to the USPSTF for community-based interventions. Like the USPSTF, the CPSTF publishes guidelines and recommendations for public health interventions based on systematic reviews of current evidence, referred to as the Guide to Community Preventive Services, or "The Community Guide" (CDC, 2015b). Evidence-based public health practice is also supported through the ACA's Prevention and Public Health Fund investments. This includes additional funds for

CDC immunization grants, the Racial and Ethnic Approaches to Community Health (REACH) program, and preventive services block grants (USDHHS, 2015). However, the impact of evidence-based policies depends on more than just the epidemiological effectiveness of the interventions (what Brownson, Chiqui, & Stamatakis, 2009, refer to as the “content” of the policy). The processes involved in increasing the likelihood of policy adoption and the ongoing evaluation of policy outcomes in target populations are equally important considerations in evidence-based public health policies (Brownson et al., 2009). Addressing public health policy questions (e.g., vaccination rates and health disparities) requires tracking various kinds of evidence, improved communication of that evidence, and making incremental policy improvements driven by repeated evaluation, as called for by Brownson and his colleagues. However, as the global responses to severe acute respiratory syndrome (SARS) or the Ebola virus suggest, incremental policy improvements are not always feasible; often research, experimentation, and policy interventions must occur simultaneously.

Health Economics

Health economics is concerned with efficiency, effectiveness, value, and behavior in the production and consumption of health and health care (Fuchs, 1987). It involves the logic of markets applied to health and health care, and considers how society finances and assesses the quality of health goods, especially health care.

It is likely intuitive to the reader why health economics is an important trend in the health policy discourse, reflecting both its relevance to broader economic issues and its salience in discussions about health-care reform. As an economic factor, health care accounts for a large portion of both public and private spending (17 percent of gross domestic product in 2013; CDC, 2015a). Additionally, the health-care sector is comprised of a range of robust markets (e.g., direct patient care, pharmaceutical production and marketing, medical device development and utilization, health-care insurance products). As a health-reform issue (which, to reiterate, is mainly focused on changes to insurance and clinical practice), it touches on two parts of the triple aim: quality of and access to care, and cost containment. More fundamentally, health economics is about the trade-offs involved in achieving societal health objectives: costs and benefits, values and risks associated with the management of health and disease in a broader market economy.

It is worth noting that health economics is a relatively new field, one that is said to begin with Arrow’s 1963 piece in *The American Economic Review* entitled, “Uncertainty and the Welfare Economics of Medical Care” (Savvedoff, 2004). Arrow posits that uncertainties in the incidence of disease and the efficacy of medical treatment result in an inefficient allocation of resources and market failures in the health-care system. As a result, medical care is not efficiently allocated through traditional market structures. Thus the primary questions are about when markets are a good idea in medical care and when nonmarket institutions are necessary in the system.

Since Arrow’s seminal work, the complexity of managing the market for health care has only increased under new technologies, institutional arrangements, and payment structures. In addition to identifying an excess supply of specialty offerings

and unmet demand for primary care and prevention offerings, Fuchs (1983) notes that one of the most important sources of market failure in health care, information asymmetry, persists. Reimbursement based on interventions (i.e., how many procedures, tests, and treatments a provider prescribes) situates physicians as decision makers in the clinical setting, and incentivizes the preservation of that asymmetry.

But that information asymmetry exists elsewhere in the world. In an effort to explain what accounts for disproportionately high health-care spending and growth in the United States compared to similar countries, Anderson, Reinhardt, Hussey, and Petrosyan (2003) argue that it is the prices—not health status or utilization patterns—that account for such differences. Prices are not only high, but they are often hidden from patients *and* clinical practitioners (Brill, 2013). Lack of transparency in hospital prices, for example, represents layers of information asymmetry (Brill argues deception) between patients, institutions, and the providers those institutions employ. These are only some of the issues that clearly point to the crucial role economics plays in the health-care system.

Evaluation of health-care markets is not just about efficiency (i.e., monetized effects). It also involves connecting market characteristics and activities to health measures that are difficult to monetize. One such example in health economics research involves the relationship between health-care competition and quality. Assessing quality of health care is a significant area of research in its own right (see Manary, Boulding, Staelin, & Glickman, 2013, for a summary of current perspectives). For example, the United Kingdom's National Health Service requires and pays doctors to make sure their patients are aware of their choices of hospital. Hospital quality data are available to patients, so hospitals have real incentives to compete on the basis of quality of care. Frakt (2015) points to a 2013 evaluation of the U.K. policy by Gaynor, Moreno-Serra, and Propper indicating that it has increased both competition and quality of care. Other studies (Cooper, Gibbons, Jones, & McGuire, 2011; Kessler & McClellan, 1999) support those findings, indicating that greater hospital competition is associated with lower mortality rates. Similarly, Frakt notes, increased hospital competition is associated with better management practices, such as quality monitoring and performance incentives (Bloom, Propper, Seiler, & Van Reenen, 2015). Overall, hospital competition is associated with improved quality, better management, and lower prices (Gaynor & Town, 2012).

Questions about health-care markets continue to concern society in its aim to achieve health objectives. As Glied and Miller (2015) point out, health economics was at the center of much of the discourse involved in the development and debate of the ACA. While health economics offers important insights into the market trade-offs in cost, quality, and choice, it also provides opportunities to think about the sustainability and social welfare gains inherent in those trade-offs.

Health Care Policy

Health care refers to services made available by medical professionals to promote, maintain, or preserve life and well-being; to relieve pain, treat injury, illness and disability; and provide comfort and hope (Venes, 2005). Because the delivery of

health-care is achieved through a web of market arrangements—for-profit, non-profit, and public sector institutions—health economics is strongly tied to health-care policy; how society pays for health care is foundational to what care is made available.

The causes, costs, and consequences of health care are also captured in health services research, the field of study focused on how people get care, how much it costs, and what happens to them as a result (AHRQ, 2002). *Health care policy* is the means by which the patient experience of care is institutionalized: how it is paid for, how it is accessed, the interactions in its delivery, and the results of that care. This includes insurance coverage and other mechanisms for access (e.g., community health centers and free clinics). Health-care policy and health economics are primarily concerned with the roles of clinical care and interventions (rather than primary prevention in the community) as mechanisms for achieving societal health goals.

Because the provision and use of health care is fundamentally tied to economics, much of health-care policy research revolves around the role of reimbursement in what services are offered, and informing possible changes to those offerings. Ultimately, payment for services is how the health-care market functions, regardless of the specific arrangement (e.g., fee for service or fixed price for a bundle of services).

In clinical settings, one question concerns the time a provider spends with a patient and how that time is valued. If tests are ordered, medications prescribed, or procedures carried out, the time is valued according to those interventions. However, time spent on communication and understanding is not so easily monetized, and is often left out of the reimbursement schedule for providers. Thus there is pressure to avoid spending time discussing anything not proximately related to a specific course of treatment. This form of reimbursement has implications for communication about complicated decisions (e.g., cancer treatment), as well as for issues with long time horizons or some degree of social stigma. Talking about end of life plans and advance directives, for example, is both an uncomfortable conversation between clinicians and patients (Span, 2015) and one for which clinicians are not compensated (Carroll, 2015). Mechanic (2014) posits that in order to achieve real parity in mental health care, time spent on pre-referral conversations in primary care settings must be included in payment arrangements.

Another question of clinical service reimbursement relates to what services truly produce good outcomes for patients. As mentioned above, pervasive PSA testing does not reduce overall mortality (Qaseem et al., 2013), but many physicians have no plans to change their practice related to testing (Pollack et al., 2012). Chou, Qaseem, Owens, and Shekelle (2011) find a general overuse of imaging for low back pain, and suggest that the practice is a function of financial incentives tied to the supply of MRIs, improving patient satisfaction, and avoidance of potential legal action tied to a missed diagnosis or poor outcome (i.e., defensive medicine). The provision of services of questionable value is a key motivation behind the push for cost effectiveness research in health-care policy (Carroll, 2014). Better understanding about the costs and effectiveness of various interventions may alter reimbursement arrangements and thus reduce overuse or inappropriate use of services.

Given the uncertainty of demand for medical care (Arrow, 1963) and its role in maintaining a productive workforce, policies about the access, cost, and quality of

health care are instrumental to achieving societal health goals. Those policies cannot be divorced from the relationship between health care payers (i.e., insurers) and providers. The ACA's focus on financial incentives in patterns of clinical practice is a reflection of this imperative.

Health Informatics Policy

Health informatics is the study of the "design, development, adoption and application of information technology-based innovation in health care services delivery, management, and planning" (Proctor, 2009). Health informatics also includes the use and exchange of information for health surveillance (e.g., HealthMap for infectious monitoring, healthmap.org) and health promotion (e.g., the use of Twitter and Facebook in several campaigns for sexual health promotion, per Veale et al., 2015). Health informatics is both technical and social in that the generation and utilization of health data is both computationally intensive and culturally mediated.

Health informatics policy refers to how health and health-care systems function in the new resource environment of prolific data generation and utilization. It concerns how systems collect data on health, disease, care delivery, and outcomes, and how that information is used. Compared to the other domains outlined above, health informatics represents a nascent line of inquiry in the health policy subfield. Both the *Health Informatics Journal* and the *Journal of Telemedicine and Telecare* were launched just 20 years ago. It was as recently as 2001 that *Computers and Biomedical Research* was renamed the *Journal of Biomedical Informatics*, heralding a shift from a focus on a technical niche of practice to one addressing broad questions about an everyday part of biomedicine.

Two pieces of legislation have played a significant role in the emergence of health informatics as a policy domain. The 1996 Health Insurance Portability and Accountability Act, specifically Title II, required the establishment of national standards for electronic health-care transactions. A series of revisions since then (particularly those related to privacy) have increased the applicability of health informatics concerns in common clinical practice. In 2009, the Health Information Technology for Economic and Clinical Health (HITECH) Act (part of the American Recovery and Reinvestment Act) provided legislative security to the Office of the National Coordinator for Health Information Technology created by President G.W. Bush's executive order in 2004. It also established standards for "meaningful use" of electronic health records to improve quality, safety, and engagement; to improve care coordination and population health; and to maintain privacy and security of health information (Office of the National Coordinator, 2014).

The modernization of the health-care system through electronic health records (EHR) is one important question in health informatics policy. In an ethnographic study, Dixon-Woods et al. (2013) find that meaningful use of EHRs, specifically using secondary data to improve patient care quality, results in process measure improvements in a clinical setting. But gains in high-quality processes and potential reductions in errors do not supplant concerns over privacy and data use of patient health records (Campbell, 2015). The rise of other sources of data collection and

management (e.g., mobile devices, wearable trackers), particularly if blended with EHR data, raise questions about the preservation of biomedical privacy in the meaningful use era (Malin, El Emam, & O'Keefe, 2013).

Health informatics policy is also grappling with the role of data generation and utilization in meeting public health objectives. Birkhead, Klompas, and Shah (2015) note the potential for EHR to contribute to public health surveillance and treatment improvement, suggesting that the use of such data provides an opportunity to bridge the gap between public health and clinical medicine. But "big data" are not a panacea for public health. Google Flu Trends' overestimate of flu levels in the 2012–13 season indicated that traditional epidemiological surveillance remains valuable (Butler, 2013). Still, all models are meant to be updated, so it is not difficult to imagine that traditional, clinic-based reporting can be paired with web-based monitoring and algorithms (such as Google Flu Trends, or Flu Near You; Chunara, Aman, Smolinski, & Brownstein, 2013) to improve both surveillance and predictive capabilities in population health informatics.

Another question of interest in health informatics policy is the development of personalized medicine.² Also referred to as precision medicine, personalized medicine relies on measures of individual patient characteristics (rather than the average patient) to inform medical decision making and treatment (FDA, 2015). This includes the collection and use of biological data, such as genetic information, as well as care experience data, such as patient input on quality metrics and weights. While the Centers for Medicare and Medicaid Services (CMS) has typically relied on expert-developed measures for high quality reporting, current work by Mukamel and colleagues provides an opportunity for patients and their families to create personalized composite quality measures on CMS's Nursing Home Compare (NHC) report card, an application referred to as NHCPlus (Mukamel, 2014). Enthusiasm for customized quality reporting and treatment options is tempered by ethical concerns and equity considerations. Genetic screening, e.g., can be used to tailor prevention and treatment, but it also has the potential to be misused by employers to identify and discriminate against high-risk employees. Personalized quality measures may increase patient-centered care for some, but it may not alleviate the cultural competency failures that minority populations often encounter.

The technological challenges of EHR, public health surveillance, and personalized medicine all demonstrate a larger truth, that data proliferation and data mining in health informatics are pervasive (Herland, Khoshgoftaar, & Wald, 2014). Leveraging the power of such data to inform collective action holds a great deal of promise in the quest to achieve societal health objectives, but not without a price. Health informatics policy must continue to negotiate the trade-offs between the potential benefits for collective goals and the protection of individual rights to privacy.

Common Themes in Health Policy: Engaging Connections in the Literature

This paper has offered just one of many ways to organize the literature that highlights the interdisciplinarity of the field of health policy. Being an expert in health policy requires deep, critical engagement with a range of different lines of inquiry

into questions about the role of human health in society. For example, participation in discourse around the ACA requires not only an understanding of health-care markets and health insurance, but also the interactions, relationships, and interdependencies among those institutions, health-care providers, and the foundations of clinical decision making.

Health policy as a subfield is diverse, but lines of inquiry are ultimately connected by the negotiation of values and information within the individual, organizational, community, and market dynamics of the societal landscape. One common theme is the role that societal change has had in shaping what health policy questions are asked and how. As the landscape of society itself has changed, so too have the information and values being negotiated within it. Another theme relates to how inquiry in health policy is carried out, i.e., the methods employed to conduct research. Changes to the societal landscape highlight complexity, and the diversity of methods in health policy research reflect the multiplicity of approaches used to confront that complexity.

Collective Action Under Conditions of Social Change

Demographic change and diversification is one element of societal change shaping health policy's central questions. Demographic and cultural diversity are driving increased attention to issues of equity and justice in health determinants and health outcomes.

Illegal immigrants do not, and have not, had access to Medicaid, even with the expansion of Medicaid in most states through the ACA. But California has made moves to provide some Medi-Cal (the state's Medicaid program) services to immigrants who lack legal status (CDHCS, 2014). This decision was informed by the economics of California's health services for a sizable immigrant population; state costs associated with emergency care and infectious disease management indicated that coverage of basic health services for all residents, regardless of legal status, was an efficient and cost-effective move (Medina, 2013). In addition to being projected as a smart policy move for California's budget, Medi-Cal coverage (though limited) should improve access to services for illegal residents. However, Bustamante et al. (2012) find that in the years before Medi-Cal expansion, health care access for Mexican immigrants was tied to legal status. It is not clear how much of a barrier documentation will continue to pose to illegal residents under the new policy.

Health disparities among immigrant populations also influence the selection of topics in public health policy research. In addition to questions about whether existing interventions are appropriate for immigrant populations (e.g., Rothschild et al., 2012), some public health scholars have suggested that more attention needs to be given to immigration itself as a social determinant of health. Using this lens is necessary to understand the structural explanations for health disparities in immigrant populations (Castenada et al., 2015; Viruell-Fuentes, Miranda, & Abdulrahim, 2012).

Health disparities across racial and ethnic categories will continue to be health policy challenges, even as minority groups become the population majority by the middle of the twenty first century.³ This shift may change the scope and conceptualization of social justice issues, though disparities in access and outcomes are likely to

be investigated in the context of the burden of chronic diseases across populations. In 2012, half of the adult population reported having been told by a provider that they had a chronic condition, and one in four adults had two or more chronic conditions (Ward, Schiller, & Goodman, 2014). While additional attention to chronic disease prevention will continue to demand public policy action and funding (as through PPHF investments in obesity, diabetes, tobacco cessation, and heart disease and stroke; USDHHS, 2015), it will be increasingly necessary for such action to be taken with express consideration of racial and ethnic diversity (e.g., through programs such as REACH; USDHHS, 2015).

The forces of an aging population in the United States draw attention to health equity and access in old age and at the end of life. By 2030, 20 percent of Americans will be aged 65 and over, compared to 15 percent in 2014 (Colby & Ortman, 2014). In part due to aging baby boomers, falls prevention and Alzheimer's outreach are acknowledged as population health concerns, not subjects of specialty care (e.g., ACA funds through PPHF; USDHHS, 2015). Given the burden that chronic conditions will continue to impose, the U.S. system can ill-afford lack of innovation in chronic disease prevention and management in the elderly. Health-care policy and health economics have taken up questions about the sustainability of elder care (e.g., Baicker, Shepard, & Skinner, 2013; Quill & Abernathy, 2013), in addition to considering the role of advance directives in achieving the kind of care individuals desire (discussed above). Services such as palliative care, chronic disease management, and Medicare more broadly are expensive, and represent resources that cannot be spent elsewhere in the system.

Socio-political and climatic volatility are shaping health policy's questions about the global challenges of safety and sustainability. The terrorist attacks of September 11, 2001 heightened American awareness of non-state international violence. Important lessons about the health effects of such attacks were learned from World Trade Center victim surveillance (Thorpe et al., 2015). But the attacks also raised new questions about long-term health consequences, long-term economic burden, health-care system response, and threats of bioterrorism and what actions need to be taken to prepare for the weaponization of chemical or biological agents. Unfortunately, the 2013 Boston Marathon bombing provided another opportunity to assess the responsiveness of health-care and public-safety workers (Kellermann & Peleg, 2013).

Natural disasters have also driven research on disaster preparedness. Hurricane Katrina raised awareness about the human element of extreme weather events, both in terms of the human contribution to climate change and in failures of preparation and response for such events (CMAJ, 2005; Jacob, Mawson, Payton, & Guignard, 2008). Seven years later, Hurricane Sandy spurred questions about how to keep health-care systems running in times of crisis (e.g., Redlener & Reilly, 2012) and improving preparation and response among health-care and safety workers (e.g., Manuel, 2013). Knowlton, Rotkin-Ellman, and Sheffield (2013) point out that with rising sea levels and other effects of climate change, another Sandy- or Katrina-like event is only a matter of time. Health policy must consider the consequences of *not* preparing for such events, not only in terms of the health care and public health systems, but across other policy domains. A focus on health and equity in policy design

and implementation is relevant to questions about what actions society will take on climate change.

Conflicting values over the role of the state in matters of health is another manifestation of the way in which societal pressures are shaping health policy. While the struggle to balance individual freedom with collective responsibilities and needs is not a new phenomenon, the dynamics of the tension—the intensity of the debate in American politics, most notably in the rise of the Tea Party and its absorption into mainstream Republican positions—are new. Consider the debate over vaccine requirements for children discussed earlier. While the health science is clear on the benefit of vaccinations, policy decisions are subject to conflicting values over the personal benefits and costs of mandatory vaccinations.

Debate over funding research on gun ownership, integration of the findings into policy, and implications of the findings for clinical practice represent a similar question: what science is done and actions are taken in the name of public and private health and safety (Laine et al., 2013). While the CDC funding ban on gun research (1996–2013) was lifted by executive order in the aftermath of the Sandy Hook Elementary school shooting in December 2012, public funding for gun research remains low, in part because the restrictive grant language applied to the CDC was extended to other federal agencies (Frankel, 2015). Gun deaths continue to be a public health and safety concern, with no changes to federal policy on the horizon (Gopnik, 2015). The debate has spilled over into clinical settings, where physician ability to discuss gun ownership with their patients is under scrutiny (Kellermann & Rivara, 2013).

Lastly, debate over the ACA itself—the Medicaid expansion, health-insurance subsidies, health-insurance marketplaces, and the individual mandate to carry insurance—has revolved around the tension between the need for collective action to address failures in the health-care system and personal (and state) autonomy. Questions about insurance marketplaces and Medicaid expansion concern what the federal government can make the states do (Haeder & Weimer, 2015); the individual mandate is about what government can make individuals do (Elhauge, 2012); and inter-branch conflict (such as the House lawsuit concerning spending approval for subsidies) is about what government can make itself do (Dellinger, 2015). Such debates about the role of the state in society demonstrate how the tension between individual and collective decisions applies pressure on American health policy.

Methods for Modeling Complexity

As an interdisciplinary subfield, health policy research has always drawn on a range of methods, including clinical trials, case studies, surveys, and epidemiological observation. The methods for causal inference and inferential statistics that dominate in econometrics and biostatistics continue to be popular in health policy research. For example, the prevalence of regression discontinuity analyses and instrumental variable approaches in health economics (e.g., Bauhoff, Hotchkiss, & Smith, 2011; Cawley & Meyerhoefer, 2012), and longitudinal and time series analysis in public health and biomedicine (e.g., Badley, Canizares, Perruccio, Johnson, & Gignac, 2015; Levy, Diez, Dou, Barr, & Dominici, 2012; Power, Kuh, & Morton, 2013).

However, health policy scholars are attempting to accommodate change and complexity in their methods by expanding beyond standard research designs and analytic procedures. RCTs have long been treated as the gold standard for establishing causation, but they are not infallible, and are often impractical in social science research, including many questions in health policy (Frakt, 2013). Sanson-Fisher, D'Este, Carey, Noble, and Paul (2014) suggest a number of alternatives to RCT for building rigorous public health evidence, including cluster RCT, stepped wedge, and interrupted time series methods. Recently, discrete choice experiments have been widely used, especially in health economics, to assess preferences for treatment alternatives (Lancsar, Louviere, Donaldson, Currie, & Burgess, 2013), health status (Bansback, Brazier, Aki Tsuchiya, & Anis, 2012), and incentives to change health behavior (Promberger, 2012; see also Coast et al., 2012; de Bekker-Grob, Ryan, & Gerard, 2012).

In addition, health policy models have expanded to include a broader set of variables and factors that contribute to health in human society. Barbazza and Tello (2014) point out that health measures are increasingly tied to other social outcomes and factors, such as education (e.g., Kemptner, Jürges, and Reinhold, 2011), social welfare, market performance, poverty, energy, and governance. In a couple of interesting examples, Smith et al. (2013) explore the effects of different kinds of energy production on human health, and Fink and Masiye (2015) find that farmers in Zambia randomized to a malaria prevention intervention have increased agricultural productivity.

Geospatial analytic tools and techniques have made important contributions by facilitating more efficient and sophisticated models of the relationship between health (factors and outcomes) and place (e.g., Sparks, Sparks, and Campbell's [2013] Bayesian spatial analysis on segregation and infant mortality). Indeed, the journal *Health & Place* is entirely devoted to research that explicitly models spatial effects and patterns in health. (See, e.g., Duran, Diez Roux, Maria do Rosario, and Constante Jaime's [2013] study on neighborhood food scarcity and socioeconomic factors, and Williams, Wyatt, Hurst, and Williams's [2012] study on the primary school built environment and childhood overweight and obesity.)

Because decisions about health and disease management are made within complex social settings, quantitative data and quantitative analysis of qualitative data (statistical analysis of survey data, for example) often fail to offer satisfactory explanations of health policy phenomena (Brownson, Diez Roux, & Swartz 2014; Rosner, 2015). Quantitative methods have a lot to offer, but the subfield has plenty of activity in qualitative research and mixed methods to address the complexity of the problems of interest. *Health Affairs* has published work using ethnographic analysis (e.g., Bhatia & Corburn, 2011), interviews and content analysis (e.g., Etchegaray et al., 2014), and regularly features case studies (e.g., Bechelli et al., 2014; Laurance et al., 2014; Lerner, Robertson, & Goldstein, 2015; Rosenbaum, Cartwright-Smith, Hirsh, & Mehler, 2012). The *Milbank Quarterly* has published studies using comparative (Sorenson & Drummond, 2014) and content analysis (Van der Wees et al., 2014), ethical (Rhodes & Miller, 2012) and critical interpretive analysis (Moat, Lavis, & Abelson, 2013), and has expanded its op-ed section to include additional informed commentary from leading health policy scholars.

The rise of team science as an approach to investigating issues of health in society represents a move to leverage the range of tools and techniques mentioned above. Team science refers to purposeful collaboration among professionals from multiple disciplines to confront complex societal problems (e.g., the burden of chronic disease on social and economic institutions) by drawing on measures, methods, models, and analytic tools across disciplines (Hall, Feng, Moser, Stokols, & Taylor, 2008). Team science involves consideration of various units of analysis, research designs, and data sources. A related approach, transdisciplinary action research, emphasizes the need for researchers to collaborate with practitioners to provide context for the development and assessment of policy interventions (Stokols, 2006). Because teams form around a specific problem rather than from a common professional or disciplinary tradition, collaborative research requires attention to the design, management, and evaluation of the team itself (Stokols, Misra, Moser, Hall, & Taylor, 2008). New approaches in research often require initial investments such as these, which provide opportunities for scientific advancement in return. The complexity of matters of health in society suggests that it is worth making such investments.

The challenges of linking models of individual health, disease, and behavior to collective actions, and back into individual decisions are in part being confronted in health policy by integrating quantitative data with qualitative methods for interpretation and sense-making. Yet the struggle to conduct health policy research that does not fall prey to either the atomistic or the ecological fallacy remains as individual-level and population data alike are used to inform both collective and individual decisions. Methods in health policy research must continue to leverage the benefits of a diverse toolbox, and work to synthesize analytic findings with diverse values and meanings.

Summary and Future Research

This article has introduced and organized the field of health policy in terms of the domains guiding inquiry about collective actions taken to achieve societal goals in human health. It has identified *biomedical policy* as a set of questions about translating lab evidence into clinical settings; *public health policy* as questions concerning the translation of community evidence back into community intervention and infrastructural action; *health economics* as questions about the financing of and expenditures on health goods and the functioning of health-care markets; *health care policy* as questions concerning the institutionalization of patient care through professional and market mechanisms; and *health informatics policy* as a set of questions about the collection and use of health and health care delivery data, and the integration of health information technology into the health-care system.

This article has also highlighted underlying themes connecting these different lines of inquiry, i.e., common societal issues that shape the way in which health policy is framed and conducted. The challenge of collective problem solving in complex decision spaces—those areas characterized by the interaction of human health with social, political, and economic institutions—is the backdrop for health policy research. Demographic change and diversity, changes in the global environment, and value conflicts

about the role of the state in personal health and health science exemplify these challenges. Leveraging both quantitative and qualitative methods across the subfield further reflects efforts to better understand the complex role of health in society.

While recent work has made important moves in confronting the complexity of managing the dynamics of human health, opportunities for continued work in that space abound. One area is in theoretical contributions: the frameworks scholars use to carry out research to inform decisions about health and disease management in society. Different lines of inquiry in health policy have strong theoretical foundations in their underlying science; for example, germ theory in biomedicine, classical economic assumptions in health economics, stages of behavioral change in public health, and machine learning algorithms in health informatics. However, health policy needs more than theories that help establish scientific evidence (as germ theory explains disease transmission, for example). It also requires theories about how society makes collective decisions about the legitimacy and value of scientific evidence, and the moves society makes to achieve objectives informed by those values and that evidence.

Deepening understanding about collective action requires theoretical frames that integrate micro explanations with macro explanation—frameworks that embed individuals, organizations, markets, and communities within systems of institutional and social decision processes. The study of the role of psychological and cognitive factors in individual decision making constitutes behavioral economics, which is one space where these sorts of connections are being made. For example, insights about program defaults (reference points) and the framing of decisions and alternatives have been used to shed light on drivers of health insurance take-up (Baicker, Congdon, & Mullainathan, 2012) and adjustments to provider payment incentives (Khullar et al., 2015). Defaults and “convenience” factors have also been shown to have an effect in choice patterns in school lunchrooms (Hanks, Just, Smith, & Wansink, 2012).

Organizational theories may also be used to explore the connections between micro and macro behaviors. Frameworks built around organizational structure and behavior have been picked up by implementation literature in health-care settings to explain organizational learning and change (Kerman, Freundlich, Lee, & Brenner, 2012) and the integration of evidence-based practice in human services (Aarons, Hurlburt, & Horwitz, 2011).

The theoretical element in both behavioral economics and organizational studies that adds value to existing frameworks in health policy is the opportunity to examine not just health *structures* (e.g., organizational and social networks and markets), but also the *dynamics, interdependencies, and interactions* among the structures and different actors operating within those structures. This is fundamental to a treatment of health and health care as what Ackoff refers to as *complex social systems* (1994, p. 176). These are systems that are affected by external conditions, that have a purpose(s), and whose parts have purposes of their own. This conceptualization accounts for both micro and macro patterns and their interactions. Processes, especially nonlinear processes such as feedback loops and learning behaviors, are fundamental to systems frameworks. The utility of systems science in public health (Luke & Stamatakis 2012; Riley et al., 2011) and health care services (Paina & Peters, 2012) has been

pointed out by a few researchers, but opportunities for both theoretical contributions and modeling innovations through the systems lens are plentiful.

Additionally, public policy and management scholars can make important contributions to a latent theme in health policy research: governance. Governance refers to “government’s ability to make and enforce rules, and to deliver services” (Fukuyama, 2013, p. 350). Consider the rise of chronic disease burden and its implications for health-care system structure and management. The American system developed from an acute disease care tradition where private firms (i.e., hospitals and independent physicians) were the key executors of health-care delivery. But the burden of *chronic* disease—in death, disability, and cost—is now the driving force in health-care system demand (CDC, 2015c). In the twentieth century, the coordinated efforts of “power-deploying institutions” (Fukuyama 2013, p. 348) in government—through for example, government payment for health care, public health efforts and successes, regulations on insurers, providers, and technologies—became central to the health-care system, even while frontline delivery remained largely in the hands of private providers. Yet health policy scholarship continues to be dominated by biological (e.g., medicine, epidemiology) and economic disciplines. Bureaucratic and democratic institutional perspectives (as studied in political science or public administration) provide important context for community, clinical, and market forces and phenomena in health.

One existing line of study related to governance research revolves around accountability. Within the health policy literature, accountability has focused mainly on quality of care and access to services. Questions about accountability are raised in terms of how quality scorecards are used for payment decisions (Conrad et al., 2013) and improvements in patient care (Porter, Pabo, & Lee, 2013) can lead to improved provider performance. The 2014 discovery that 35 veterans died waiting for care at Phoenix-area Veterans Health Administration facilities (Daly & Tang, 2014) raised questions not only about the backlog of patients, but about the incentives in place to keep those wait times hidden from the public (Reed, 2014) and how to reestablish trust in the management of VHA centers across the country (Kizer & Jha, 2014).

As the VHA scandal suggests, monitoring the performance of providers is not the only accountability relationship of import in health policy. To meet societal health objectives, policymakers, administrators, and society itself must be held accountable for collective health objectives and outcomes. Data security is one area where this idea has gained traction. Crawford and Schultz (2014) have highlighted the general need for considerations of due process and legal protection in light of big data collection systems in both the public and private sectors. Specific actions to be considered with health data include the de-identification of patient records (McGraw, 2013) and the encryption of insurer files (Alonso-Zaldivar, 2015).

Discourse around health disparities broadens the scope of accountability beyond formal health-care actors by considering how *all* collective actions have implications for health equity. The *health and equity in all policies* movement in the public health community speaks to the idea that health equity—equal opportunities for health across populations—is fundamentally a social justice issue (Braveman et al., 2011). Thus, in order serve citizens faithfully, health policy efforts must include specific

mechanisms for accountability to the people (e.g., the HHS strategy for reducing health disparities, Carey, 2011; The Health Equity and Accountability Act of 2014).

Ultimately health and disease are profoundly personal, but they also are deeply collective. Individual health behaviors and outcomes are not independent events. Society is not a population of dice rolling themselves repeatedly; it is more like an intricate pattern of dominoes set up across a series of variably sturdy card tables. Our decisions shape and are shaped by the decisions others make, and by local and global events. We take cues from our institutions and each other, both as individuals and as a society. Health policy is both a reflection of that negotiation and a venue for informed discourse to leverage values and information for collective action. In an era where we confront complex problems of health in society, health policy is ultimately a matter of how the institutions wielding the power of our collective action use that leverage.

The ACA continues to be the primary driver of public discourse about health care in the United States. However, this essay has indicated that debates about health insurance coverage and health care payment reform—the foci of the ACA—are only part of the current health policy picture. Those scholars who wish to engage meaningfully with the subfield would do well to connect with the full range of inquiry outlined above, as well as with the deeper societal trends cutting across those domains. Investigation of health policy's biggest questions, including those involving the ACA, demands contributions through the confrontation of the interdependencies among health science, economics, services, and informatics; through the challenge of complexity that characterizes health policy scholarship in the twenty-first century.

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Notes

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1. See Brownson, Baker, Leet, Gillespie, and True (2011) for an extensive description on evidence-based public health and its practice.
2. I am indebted to an anonymous reviewer for recommending this discussion of personalized medicine, particularly its focus on NHCPlus as an example of care personalized for patient preferences.
3. Non-Hispanic white will be the minority compared to all other racial/ethnic categories by 2044. Groups other than non-Hispanic white made up 38 percent of the population in 2014, but will comprise 56 percent of the population in 2060. See Colby and Ortman (2014).

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People Don't Talk in Institutional Statements: A Methodological Case Study of the Institutional Analysis and Development Framework

Cristy Watkins and Lynne M. Westphal

In this paper, we describe our application of Ostrom et al.'s ADICO syntax, a grammatical tool based in the Institutional Analysis and Development framework, to a study of ecological restoration decision making in the Chicago Wilderness region. As this method has only been used to look at written policy and/or extractive natural resource management systems, our application is novel in context (a value-adding environmental management action), data type (in-depth, qualitative interviews, and participant observation), and extent of institutional statement extraction (we extract rules, as well as norms and strategies). Through detailed description, visual aids, and case-specific qualitative examples, we show the usefulness of the ADICO syntax in detailing the full set of institutional statements-in-use: rules, norms, and strategies. One of the most interesting findings is that we found norms (and not just rules) to be prevalent and particularly meaningful guides for people's actions. This reinforces the need to address norms and strategies, not only rules, when developing effective policy.

KEY WORDS: ADICO syntax, institutional analysis and development, norms, ecological restoration, qualitative data

Introduction

Creating effective policy is rooted in understanding what guides human behavior, often behavior as a part of collective action. Without such understanding, a policy may not work as policymakers wished. Emphasis is often placed on rules as guides for behavior, and therefore as the aim of policy. But, there are other forces that guide behavior, including norms and strategies. What roles do these play and how can they be more fully understood to help create more effective policy? In the context of complex social-ecological systems, an in-depth look at the strategies, norms, and rules-in-use may help understand both the social processes in effect, as well as the interplay between the social and the ecological processes that can lead to resilience and sustainability—or not.

The Institutional Analysis and Development (IAD) framework, developed by Ostrom and colleagues (Ostrom, 1995), has most commonly been used to explore what leads to sustainable and resilient use of common-pool resources in social-ecological systems (e.g., Fleischman et al., 2010; Imperial, 1999; Mincey et al., 2013; Poteete & Welch, 2004). The IAD framework aims to understand what drives collective action, at the core of which are institutions. In contrast to the common use of the word “institution” to refer to a building housing a bureaucratic organization like a school or a hospital, in IAD “institutions” are rules, norms, and strategies, or collectively shared prescriptions that guide behavior in any given situation (Ostrom, 1995).

As in policy, rules are often the focus of investigation in IAD research. However, the importance of norms is well established, even foundational, in various social science fields. From sociology (Durkheim, [1885] 1982) to anthropology (Douglas, 1966), in law (Posner, 2002), and in political science (Axelrod, 1986), norms are understood as strong motivational and guiding forces of human behavior. Norms are well integrated into IAD, too. Ostrom and colleagues include them in game theory experiments that underpin IAD (Ostrom, 1995, 2009) and Ostrom details their importance in natural resource management, even indicating that “collective action may fail when social norms are crowded out” (Ostrom, 2014, p. 26). While it may be easier to change rules, norms are not static; they can and do change over time, and can in fact be critical to creating effective policy (Blommaert, 2013; Perrucci & Perrucci, 2014).

In 1995, Crawford and Ostrom developed a syntactical tool (the ADICO syntax) to assist in explicating the institutions of a social-ecological system, or more accurately, the *institutional statements* of a social-ecological system. An institutional statement is defined as a “shared linguistic constraint or opportunity that prescribes, permits, or advises actions or outcomes for actors . . . [they] are spoken, written, or tacitly understood in a form intelligible to actors in an empirical setting” (Crawford & Ostrom, 1995, p. 583). Extracted as unique units of analysis, statements can be analyzed in a systemized way, both qualitatively and quantitatively (Basurto, Kingsley, McQueen, Smith, & Weible, 2010).

Although institutions and institutional statements have been recognized and studied through the IAD framework for decades, detailed applications of ADICO are few. Basurto et al. (2010) provide the first application of ADICO to two legislated policies in the United States. They provide a guide, giving a thorough explanation of each syntax component. Norms constituted the bulk of the institutional statements in the policies they explored, because they coded tangible sanctions required in rules only when they were explicitly stated. Siddiki, Weible, Basurto, and Calanni (2011) added a syntax component to ADICO—oBject. The “oBject” allows analysts to further distinguish between who conducts the institutional statement and who the statement affects, easing application of the IAD in some circumstances. Schlüter and Theesfeld (2010) proposed a continuum of sanctions to define rules, norms, and strategies. Mincey et al. (2013) argued that inconsistency in definitions of IAD elements was one reason for the lack of empirical research on the importance of institutions in urban social-ecological systems. They provide a systematic institutional analysis of urban tree management, in which they present case-specific descriptions of each of the statement classifications and illustrate how there can be similar rules at multiple

Table 1. The Components of the ADICO Syntax and How They Define Rules, Norms, and Strategies

Component	Definition
<i>A</i>	Attribute (the “who”—who does this statement refer to?)
<i>D</i>	Deontic (may, must, must not, should, should not)
<i>I</i>	aIm (the “what”—what is the statement about?)
<i>C</i>	Condition (under what conditions must the alm occur?) *Default can be “in all times and in all places” (Ostrom, 1995, p. 149)
<i>O</i>	Or Else (sanction for not following a rule, norm, or strategy) *The term “Or Else” is only used for rules *Can be gradual-initial or accidental violations may not incur tangible sanctions, but repeated violations lead to them (Ostrom, 1995, p. 152; 2012)
<i>ADICO</i> = Rule, <i>ADIC</i> = Norm, and <i>AIC</i> = Strategy	
RULE ^a : All villagers [Attribute] must not [Deontic] let their animals trample [aIm] the irrigation channels [Condition, note that the animals <i>may</i> trample elsewhere and not trigger this rule] or else the villager who owns the livestock will have to pay a fine [Or Else].	
NORM : If you [Attribute] use the microwave [Condition], you must [Deontic] clean up your own mess [aIm]!	
STRATEGY : The person who places a phone call [Attribute] calls back [aIm] when the call gets disconnected [Condition].	

^aRule, norm, and strategy examples are from Ostrom (1995, p. 139).

levels. However, they focus only on rules and do not provide examples of norms and strategies.

We build on these earlier works by illustrating how we used the ADICO syntax in several novel ways to extract institutional statements from qualitative data, and how we categorized those institutional statements by other IAD constructs (level, type, classification). We pay particular attention to the classification of statements as rules, strategies, or norms. Content analysis complemented our use of the IAD constructs, by informing our understanding of the meaning and strength of the rules, norms, and strategies we extracted. These methods allowed us to test the usefulness of ADICO for understanding this particular nonextractive social-ecological system, and to help inform policies developed within this and other social-ecological systems.

IAD and Institutional Statement Coding Constructs

Institutional statements are composed of specific grammatical components, expressed as the ADICO syntax: A (attribute), D (deontic), I (aIm), C (conditions), and O (Or Else) (Table 1; Figure 1). Understanding whether a component is present is critical to determining the statement type: a rule contains all five components (ADICO), a norm contains all but an Or Else (ADIC), and a strategy contains all but a deontic and an Or Else (AIC). Or, as Ostrom puts it, rules are a mere “grammatical step away from norms and two steps away from strategies” (Ostrom, 1995, p. 138). Ostrom provides examples, which we parse into the ADICO syntax in Table 1. We discuss *how* to determine which components are present later in this paper.

A second characteristic of a given institutional statement is the level at which the statement operates: operational, collective-choice, or constitutional (Table 2; Figure 2). The operational level of analysis is where individuals make decisions about day-to-day activities, which can directly affect on-the-ground conditions. The collective-

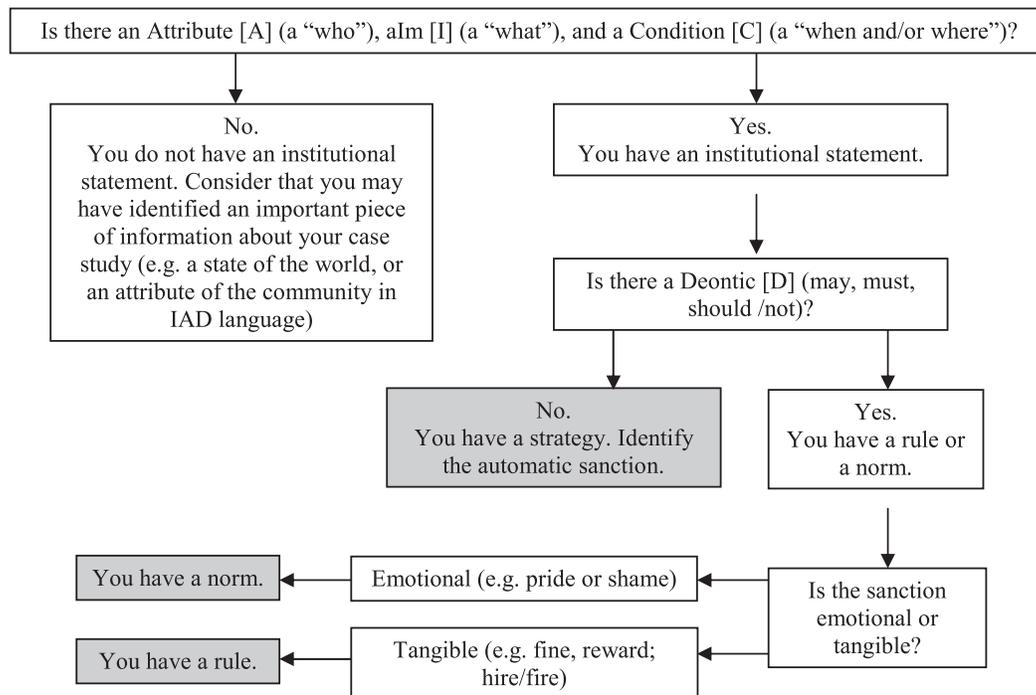


Figure 1. Decision Tree for Determining Whether You Have an Institutional Statement.

choice level of analysis focuses on policy decisions about the choice of institutional statements that govern operational activities. The constitutional level of analysis is concerned with the authorized actors for collective-choice decisions and the institutional statements governing those decisions (Ostrom, 1995).

A third characteristic of an institutional statement is its classification, which describes what the statement is about; Ostrom identifies seven types (Ostrom, 1995) (Figure 3). *Position* statements are about creating positions (e.g., volunteer, executive director), the number of positions, and how many people can be in a position. *Boundary* statements concern a person's eligibility to enter into and exit from a position (e.g., educational requirements). As such, every boundary statement has an associated position statement. *Information* statements are about information types, sources, and flows. *Payoff* statements assign costs paid and benefits received to actions or outcomes. Typically, these are monetary or legal. *Aggregation* statements concern joint control over a particular action. As such, every aggregation statement has an associated choice statement.

Ostrom calls *choice* and *scope* classifications "all other" categories, since they are more general and capture anything that does not fall into the other classifications above (Ostrom, 1995, p. 209). Choice statements focus on actions while scope statements focus on outcomes. Because monitoring is key to an institutional statement being a rule or norm, therefore, when monitoring *outcomes* is easier than monitoring *actions*, scope statements may be more appropriate than choice statements (Ostrom, 1995, p. 209).

We drew heavily on Schlüter and Theesfeld's (2010) distinctions between strategies, norms, and rules. First, they use "sanctions" to mean both negative and

Table 2. Examples of Levels of Analysis

Level	Definition	Example
Constitutional	Prescribing, invoking, monitoring, applying, enforcing (e.g., an organizational policy that forbids discrimination)	A state-level policymaker, or an organization board member, establishes regulations and guidelines for natural resource management decision processes, and decides who can be involved in those processes
Collective-choice	Prescribing, invoking, monitoring, applying, enforcing (e.g., a group of employees conducting an interview or hiring a person)	Staff of an organization are allowed to determine which management techniques should be used, or criteria (who, where, how) for their use
Operational	Provision, production, distribution, appropriation, assignment, consumption (e.g., an employee conducting his/her assignment)	Staff or volunteers of an organization are allowed to implement particular management techniques on the ground

positive consequences of not following or following an institutional statement. Second, they situate the types of sanctions associated with rules, norms, and strategies along a continuum (Figure 4). Schülter and Theesfeld follow Ostrom's definition regarding what constitutes a rule: an Or Else that is the result of collective action; the threat of the tangible sanction is backed by another rule or norm that changes a deontic in a related institutional statement; and there is a prescription regarding monitoring violations (Ostrom, 1995, p. 150).

Norms, in Schlüter and Theesfeld's continuum, carry emotional sanctions that result from one's own, or another person's, response to an action or outcome. For example, one may feel pride upon facilitating conversation between two fractious

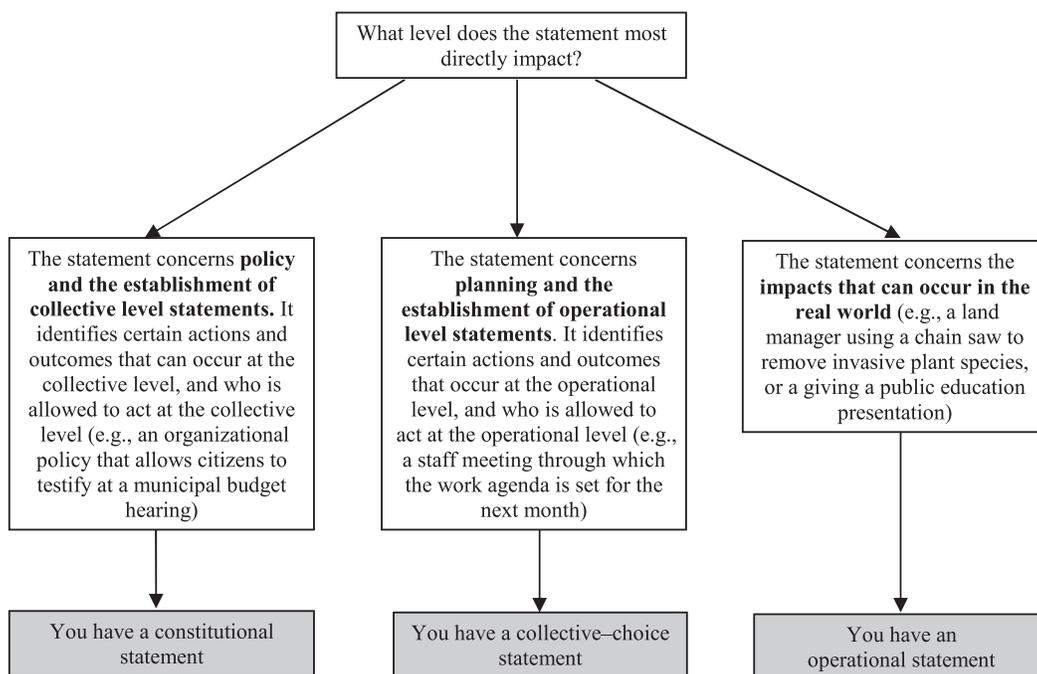


Figure 2. Decision Tree to Determine the Level of the Statement.

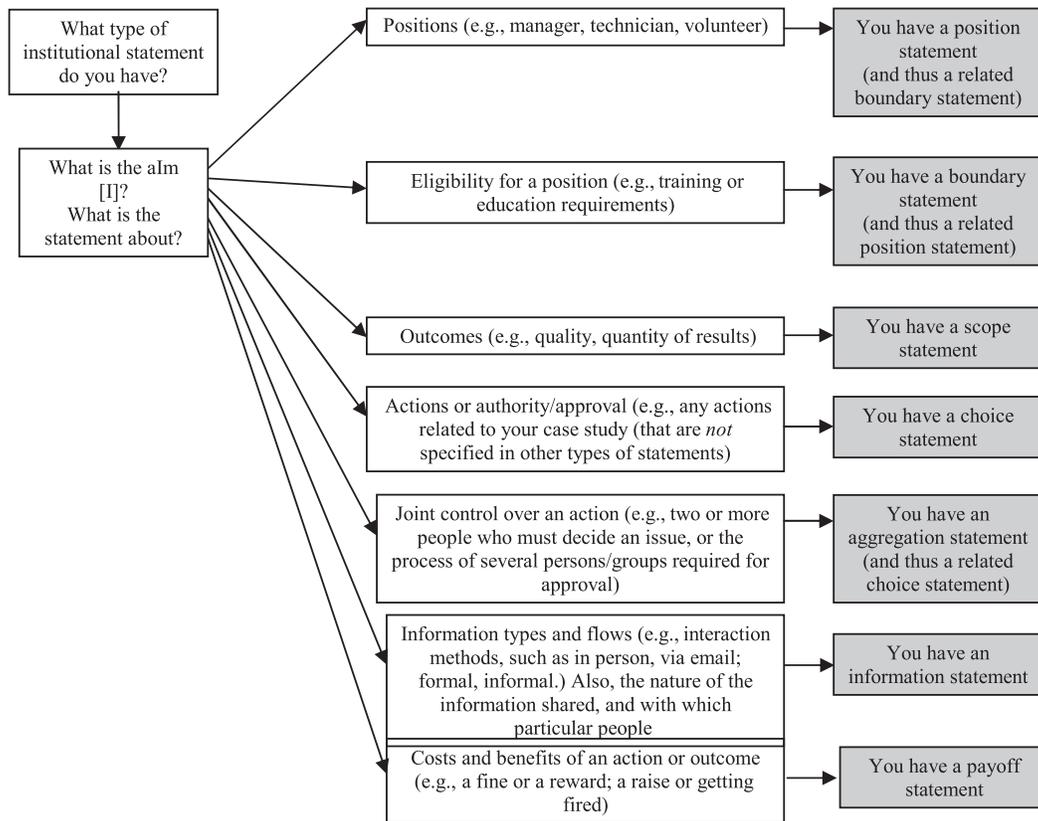


Figure 3. Decision Tree for Determining the Statement Classification.

colleagues. Conversely, one may feel guilt or shame for not participating in a conversation with a colleague. Such emotional sanctions have been operationalized in the lab by Ostrom as delta parameters, which represent the intrinsic benefits or costs of obeying an institutional statement (Ostrom, 1995, p. 121). Emotional sanctions may, at times, meet the definition of an Or Else (see above), and therefore may be a sanction for a rule rather than a norm. Consider the Or Else of shunning in some religious communities, as an example.

Schlüter and Theesfeld (2010) suggest that strategies are defined by automatic sanctions. Unlike Or Elses, automatic sanctions are not imposed by another person

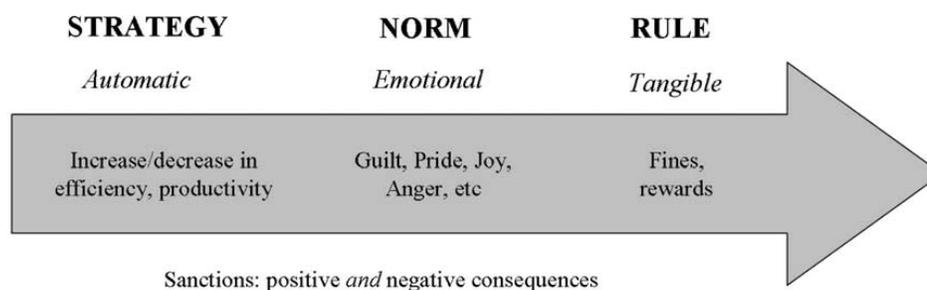


Figure 4. Strategies, Norms, Rules, and Their Associated Sanctions. Based on Schlüter and Theesfeld's (2010) Diagram.

but are the automatic outcome of an action. This well-worn joke provides a good example of an automatic sanction; a guy goes to see his doctor:

Guy: "Hey doc, every time I drink my coffee, I get a sharp pain in my eye."

Doctor: "What do you take in your coffee?"

Guy: "Cream and sugar."

Doctor: "Have you tried removing the spoon?"

The strategy and its automatic sanction are "remove your spoon from your coffee cup or you'll get a painful poke in the eye from your spoon when you drink your coffee."

A more real-world example of a strategy is that of driving. If you drive on the wrong side of the road, you may get into a serious accident; that is, drive on the correct side of the road (the strategy) or risk death (automatic sanction). An important component to this example is that there are also applicable rules and norms regarding the side of the road on which one should drive, that is, the presence of a strategy does not preclude the presence of a norm or rule, or both. In fact, in Schlüter and Theesfeld's framing, while strategies only have automatic sanctions, norms may have both automatic and emotional sanctions, and rules may have automatic, emotional, and tangible sanctions.

This is not the divergence from Ostrom that it may at first seem. Ostrom also recognizes that there are *consequences* (sanctions) to *all* actions:

We are, of course, aware that all actions have consequences as pointed out to us by many students. . . . The difference that the OR ELSE makes is that the consequence specified by the rule would NOT have occurred without the rule being in place and being enforced. (Ostrom, 1995, p. 298; emphasis in the original)

Schlüter and Theesfeld, then, are operationalizing this point as they conceptualize the sanctions associated with rules, as well as norms and strategies, as moving from consequences with no human imposition (automatic), to human-induced emotional consequences (norms), to human-induced tangible consequences (rules) (Figure 4).

Context: The RESTORE Project

Funded by NSF's Dynamics of Coupled Natural Human Systems program, RESTORE explored the links between ecological restoration decision making and implementation processes and biodiversity outcomes in oak woodlands in the Chicago Wilderness region, essentially asking, "Does social process affect biodiversity outcomes?" The Chicago Wilderness area spans 38 counties around the Chicago metropolitan area and its members include large county departments, public gardens, small land trusts, universities, and volunteer groups (chicagowilderness.org). We

focused on 10 groups in Chicago Wilderness that conduct restoration of oak ecosystems, purposefully selecting them across three management categories: manager-led (the land owner is dominant in decision making), co-management (high degree of volunteer autonomy), and research-led (scientific exploration is central). The RESTORE project sought to describe, compare, and contrast the various decision-making styles of Chicago Wilderness restoration practitioners using a variety of analytic approaches. Using the IAD framework and ADICO syntax to identify institutional statements used in these decision-making processes was one method we used to make comparisons between organizations and decision-making processes. Data on vegetation, soil properties, invertebrates, and other ecological data were also collected for each restoration site.

We conducted 80 semi-structured confidential interviews with 76 individuals, and observed over 50 organization meetings and ecological restoration workdays across the 10 case study organizations. Those interviewed were restoration decision makers holding different positions and with varying authority. The interviews were extensive and covered the respondent's background and job responsibilities, their assessment of the natural area in question, the ways in which decisions about ecological restoration were made, and the importance and inclusion of the public and resources such as money and labor in decision making. Because components of the IAD framework were not the only issue of interest, the interviews asked about a wide range of issues, though some questions and probes were designed specifically to elicit information about rules, strategies, and norms.

Interviews and fieldnotes were analyzed by themes and systematically coded for further analysis using NVivo (Miles & Huberman, 1994) (QSR International Pty Ltd., Version 9, 2012). The codes captured broad themes, such as "management actions," "perceptions of landscape," "decision information," "emotion," and "actors." Coding for emotion included categories such as anger, disgust, happy/joy, and awe/wonder. The emotion analysis, in particular, aided in our assessment of institutional statement type (rule, norm, strategy). Details on RESTORE can be found in Westphal et al. (2014).

Developing the Institutional Statement Extraction Process

Following procedures similar to those used by Basurto et al. (2010) and Siddiki et al. (2011), we attempted to use NVivo to code for institutional statements within a broad code "decision information." Using NVivo and similar software that supports qualitative analysis is a standard approach to analyzing qualitative data using any number of theoretical approaches, but it did not enable us to extract institutional statements. We could not select a sentence, or even a paragraph, and effectively code it to IAD and ADICO elements. Wherein rules are concisely stated in written policy, our respondents did not list the rules, norms, and strategies used in ecological restoration. Rather, they described and summarized, in anecdotes and personal assessments, "how things get done" and how they felt about it. Furthermore, institutional statements, or components of a statement, could be talked about in multiple sections of an interview, or within several different interviews or other fieldnotes.

Since the traditional thematic coding method failed, we took a different approach: manual interpretation and extraction of institutional statements. We selected a subset of our data to develop our approach, ensuring that we included a diverse representation of organizations, positions, and levels of authority. Using a spreadsheet template, we collectively extracted statements for several transcripts, and then completed the remaining interviews in the subset individually. We carefully re-read each interview, looking for how respondents described typical decision making within their organization (we provide examples of this evaluation process later in the paper). The spreadsheet template included columns to record the case, respondent code, the institutional statement in “plain English,” each ADICO component (Attribute, Deontic, aim, Conditions, Or Else), level, classification, type, and notes (Table 3). With this method, we effectively deconstructed the more functional definition of institutional statements—that is, “how things get done”—into the conceptual definition of an institutional statement. Notes could include key phrases, excerpts, or analytical “nuggets” drawn from the statement. They allowed us to return to the fieldnotes themselves and assess contextual information around the statement to better gauge its strength and value.

An interrater reliability check on this initial subset resulted in 80 percent agreement, which is regarded as a very strong score (Everitt, 1996). We discussed the remaining 20 percent of statements that one of us extracted that the other did not, and we agreed with the institutional statements found by the other. This provides evidence for the need to have multiple researchers analyzing the data. Next, we extracted institutional statements from all of the remaining interview transcripts and fieldnotes. We discussed and combined our individual lists of institutional statements. Statements were considered “duplicates” when the same statement was extracted from multiple respondents. Multiple expressions of a given statement indicated that they were “shared” and were often a sign of a strongly followed institutional statement (we discuss the idea of shared understanding further below). To make it easier to find duplicates, we arranged statements into groups of similar topics, based on the thematic codes of import (e.g., Land use planning; Restoration planning; Communication; Implementation).

We continued to review and discuss our lists, refining the type, level, and classification of institutional statement where needed. We repeated this review process until we were no longer changing rules to norms, scope to choice, and so forth. Next, we uploaded the complete set of statements into NVivo where we could analyze them in the context of the full dataset of interview transcripts and observational fieldnotes. At this stage, we included additional members of our social science team in discussion of the statements to ensure that our institutional statements made sense to those knowledgeable about the cases and data but not immersed in IAD and ADICO.

Finally, we verified that the differences in the number of statements in a case were not an artifact of the amount of data we had per case. That is, if we were to use the *number* of rules, norms, or strategies from a single case in an analysis, we needed to be sure that the larger number of them was not due to having talked with more people in that case and therefore having more text from which we extracted institutional statements. This was done by checking the number (and type) of field notes

Table 3. Data Template for Documenting Institutional Statements, Where: Case = Organization, Who = the Person from Whom the Excerpt is Taken; Statement = the Full Institutional Statement; A,D, I, C, O = Each ADICO Syntax Component; Level = Operational (O), Collective-Choice (C), or Constitutional (Co); Class = Choice (C), Scope (S), Position (P), Boundary (B), Aggregation (A), Information (I), or Payoff (Po); Type = Strategy (S), Norm (N), or Rule (R); and Notes = Additional Comments or Excerpts Deemed Helpful by Researcher

Case	Who	Statement (rule, norm, and strategy)	Attribute	Deontic	I aim	Conditions	Or Else	Level	Class	Type	Notes
R2	WX	Manager may collect seed locally (CW area, own site, fp's, and even up to WI and Iowa)	Organization restorationists		Collect seed	Locally (own site, forest preserves, up to 200+ mi)		O	C	S	Considers this "restricted," farther places are rare; collect mostly from own site
R2	WX	Must make sure that management program fits everybody's needs as best as possible-org divisions/foci	Organization	Should	Balance all aspects of org depts, goals, etc.	Always		C	C	N	"I think that's part of, I might say cultural upbringing within this institution"-implied emotionality: risk weakened joint understanding and group cohesion

for each case against the number of statements we extracted. We found that cases with fewer notes or interviews did not necessarily have fewer institutional statements, and those with more notes did not have more statements (Westphal et al., 2014). This laid the groundwork for future comparative analysis of the kinds of institutional statements across groups.

Overcoming Challenges in Extracting Institutional Statements

In the following sections, we describe in more detail how we evaluated our data and extracted each of the ADICO syntax components, to determine the level, classification, and institutional statement type. We present qualitative data excerpts (and in some cases several excerpts that lead to a single statement), a description of how we evaluated those data, and examples of institutional statements that were extracted from those data (research participant names are pseudonyms). We begin with the ADICO syntax, and then discuss each attribute of an institutional statement in turn: the level (e.g., operational), the classification (e.g., choice or scope), the type (e.g., rule, norm, or strategy). We also discuss the process to determine whether a proposed institutional statement is shared.

Identifying Each of the ADICO Syntax Components

As described above, we extracted each of the ADICO syntax components (Table 1; Figure 1) for each institutional statement we identified. Some of these were relatively easy, others took more consideration. We followed Siddiki et al.'s (2011) suggestion that "when applicable, imply components when they are not explicitly provided" (p. 89). This was important, because people do not speak "institutional statement"; instead, ideas are often left partially stated, even in the most structured of interviews. We did, however, require evidence in the data to support our inferences; often, our task was to weave together data bits from multiple sources to form support for the various components of an institutional statement. We describe our process below.

Identify the aIm (I) (and the Attribute and Condition). The aIm is the "what" in an action, such as "remove invasive species." All institutional statements have an attribute (A), an aIm (I), and conditions (C), but since the attribute (the "who") was generally obvious in our study, and since conditions in our data tended to be the default "at all times and in all places" (Crawford & Ostrom, 1995, p. 149), we found it most important to first establish the aIm (the action or outcome; the "what"). In our data, examples of aIm's included "seek out public opinion," "defer to wildlife biologists," and "purchase land." Identifying the aIm is also useful because the aIm is used to determine the classification of the statement (position, choice, etc.) (Figure 3).

Identify the Deontic (D) and the Sanction (O, for Or Else). The deontic identifies the extent to which the institutional statement is prescriptive, or how strongly the statement is (supposed to be) enforced. Deontics that oblige a person to act include "should" and "must," while deontics that forbid a person to act include "should not" and "must

not." In both scenarios, "must" indicates a stronger obligation and is likely to be associated with a rule, while "should" could be associated with a rule or a norm.

Recall that the sanction can be automatic (for strategies), emotional (for norms), or tangible (for rules), and that a single institutional statement may have more than one sanction (e.g., shame and a fine) (Figures 1 and 4). Also, recall that the sanctions can be graduated, in that first- or second-time violations may not result in the strongest sanction, but repeated offenses ultimately lead to a sanction being applied. An obvious example is sanctions in most U.S. states for driving under the influence of alcohol or drugs. These sanctions start with fines but can be much stronger, like permanent loss of driving privileges, with repeated, or grievous, offenses. We coded rules, norms, and strategies by the evidence we had for the strongest possible sanction, from automatic, to emotional, to tangible.

Identifying the Level (Constitutional, Collective-Choice, or Operational) of the Institutional Statement

Determining the level—constitutional, collective-choice, or operational—at which the institutional statement operates can be a tricky because, "all rules are nested in another set of rules that define how the first set of rules can be changed" (Ostrom, 1995, p. 58; Table 2). While we could infer institutional statements that were not mentioned directly (e.g., mention of elected officials alludes to all of the rules surrounding voting and elections), we mostly limited ourselves to those for which we directly had data. This is also what Basurto et al. (2010) did, arguing that each statement was its own unit of analysis.

Occasionally, however, we had evidence for institutional statements that were nested at multiple levels. For example, consider the following statement: "Volunteers give testimony at budget hearings." This is an *information* strategy because the volunteers are conveying information that increases awareness of, and, they hope, subsequent financial support for, restoration conducted by volunteers. It is *operational* because it is "on-the-ground" and is not about making guidelines for on-the-ground actions, and it is a strategy because there are no Or Elses if a volunteer does not testify, nor did we have evidence of norms that they should testify. However, this strategy is possible because it is nested within this collective-choice information rule: "Volunteers may give testimony at budget hearings." Further, this collective-choice rule is nested in the constitutional rule that *citizens may present their interests to their elected officials*; the rule specifies who can participate in policy-making (Ostrom, 1995). No one directly cited these higher-level rules, but they referred to how the volunteers could do this and staff could not. Here, there is an enforceable condition that the volunteers are citizens of the county; they can testify in their county, but not in other counties (Figure 2).

Identifying the Institutional Classification (Scope, Choice, etc.)

Several of the institutional statement classifications are straightforward to identify (Figure 3). Position, boundary, even information statements were relatively

obvious in our qualitative data. In fact, Ostrom even concedes that position and boundary rules are often not all that interesting (Ostrom, 1995, p. 193). In contrast, deciphering choice, scope, and aggregation classifications is not so simple, and payoff rules proved to be more nuanced in our data for several reasons we discuss below.

Is This a Choice or Scope Institutional Statement? A recurring struggle we had concerned deciding whether an institutional statement was about an outcome (and therefore a scope statement) or an action (and therefore a choice statement). Recall that Ostrom (1995) describes these two classifications as catch-alls for institutional statements not captured by information, aggregation, position, boundary, or payoff classifications. For example, the importance of “follow-up” in ecological restoration (e.g., applying herbicide to remaining buckthorn stems after cutting) was evident in all of the organizations. However, it was often difficult to determine whether follow-up is a condition (C) of an action, and thus a choice statement, or a description of an outcome, and thus a scope statement (Ostrom, 1995, p. 208). Although the process of parsing scope from choice got easier over time, actions beget outcomes and specified outcomes imply necessary actions; the two can be hard to tease apart in day-to-day conversation. Consider the following interview excerpts:

1. *Bob mentions that Sue has sometimes pleaded with him to not give her another piece of land to maintain—Bob seemed to be cognizant of the limitations that Sue and her staff have, and does not want to approach management as a triage (e.g., suddenly taking out a big chunk of buckthorn, or some other management action that shakes up the system drastically) if the follow up—the stewardship and nurturing—can’t happen afterwards. (Bob, department director—interviewer notes from unrecorded interview)*

2. *If we haven’t met some of the goals yet, it’s probably just time constraints, manpower [sic], that sort of thing. I think we’re moving in the right direction toward them, but they’re not things we can do sometimes all in one shot. And even with some of our clearing, we’ve learned that it’s best to do it somewhat slowly so that we can keep up with it and do the follow-up work. Rather than opening up huge areas and then having resprouts and other things. Can we then effectively manage the follow-up work to the clearing? Do we have the manpower [sic] to do that? Do we have the time? (Evelyn, ecologist)*

From these data, we derived the following institutional statements¹:

1. *The Director [A] gives new management projects to the crew [I] only when follow-up is possible [C].*
2. *Restorationists [A] conduct clearing projects slowly enough [I] so that they can keep up with it and conduct follow-up work [C].*

We considered the first statement a choice statement because the likelihood of follow-up was a condition of the department director’s action (choice and authority)

to add additional projects to the crews' responsibilities. In contrast, the second statement is a scope statement, in which the outcome of working slowly is defined as the aim; the outcome is the *ability* to not outpace staff ability to maintain the work, thereby increasing the likelihood of restoration success.

Another example of the challenge in distinguishing between choice and scope statements includes statements that concern balancing and prioritizing goals. Consider the following interview excerpts about deciding whether to take action and what actions to take:

1. *Primarily, [my job is] overseeing the implementation of restoration management. So we have prescribed fire, we have deer management, we have vegetation management, we have invasive species, we have restoration projects that come in and come out the door. Many of those are tied to grant funds. Now they're being tied to [increased public funding]. You know, we passed this successful [bill], and so we have [X amount of dollars] to spend. . . And those are all projects that we identified after we had a successful [bill]. Monies are coming and going and a lot of that is what sort of dictates what we do. (Allen, manager)*

2. *Kim: Two years ago we had 6 acres of turf grass management dumped in our laps. Which is a lot.*

Interviewer: And you're still in charge of it now?

Kim: Yeah. And that is almost the number one priority because they are so high profile, and there's a legal ordinance in town for your grass.

Sam: For example, the [neighbors], would complain about the dandelions growing in the parkway—our parkway here, across from their street. So, we have to take more of our time to control dandelions on our parkways.

Kim: It's tough too, it's like the same thing, it's when the flowers, when the weeds go to seed, the grass you gotta' mow it, it's too long for our equipment. . . it's in our equipment for weeks.

Sam: So it's a total different management. Landscaping. (Kim and Sam, restoration technicians)

From these data, we derived the following institutional statements:

1. *Manager [A] prioritizes sites [I] when funded [C].*
2. *Managers [A] balance restoration and landscaping/maintenance (trash, grass mowing) on all sites [I] always and everywhere [default C].*

In the first statement, sites with funding are chosen over those without; we consider choosing an action, and thus this statement is a choice statement. In the second statement, although there is a town ordinance (a rule) that landscaping must happen, this statement refers to the fact that crews are not making a choice of one task or another, but rather allotting their time and effort in the field in ways that achieve a particular outcome—that is, undertaking both restoration and landscaping. Thus, this example is a scope statement.

Is This a Choice or an Aggregation Institutional Statement? Another challenge we encountered was parsing out authority (captured in choice statements) from joint control (captured in aggregation statements). Both of these actions are central to decision making processes, in any situation. Consider the following interview excerpts:

1. . . . *But it [the site] was languishing under the buckthorn. We're thinking, "great, this guy is wonderful. He's gonna come in, we're gonna have a great workday, we're gonna save this place turn it around."* Turns out, he like leaves the area and James approves some other crazy guy to become the steward for the site just because, you know, "I think he's a good guy." He has a workday out there. There were 50 kids. After a rain. They walked back and forth and back and forth and back and forth. (Zoe, ecologist)

2a. *Sarah said that the "higher ups" occasionally throw out projects for immediate consideration. I asked if they occurred at least once a year, and she said yes.* (Sarah, technician—notes from unrecorded interview)

2b. *Erika also talks about communications received from "the higher ups"—she's not sure who, exactly—that go through Val to the staff to tackle aesthetic issues such as: clearing piles of brush; clearing brush on the sides of the road. . . ; and clearing dead herbicided plants near the road. . .* (Erika, technician—notes from unrecorded interview)

3. *Well, we have our. . . our office of natural resources. And then you may have input from other departments, like maybe our planning department, for instance, or operations. Ultimately, it's probably going to be some of the directors in some of those departments. Like in ours, Jill is the director of the office of natural resources, and Phil is directly below Jill. So it's going to be probably people like that. They're going to ask for input from us on things, but ultimately, especially if it's controversial or you have things going on like that, it would probably be individuals like that would be making the final decision. And they may say we're basing this off of recommendations by staff and such.* (John, ecologist)

From these data, we derived the following institutional statements:

1. *Volunteer manager [A] must [D] approve stewards for a site [I] always and everywhere [default C], or else volunteer manager risks reprimand (or more) and volunteers risk losing privileges [O].*
2. *Natural resources manager and her staff [A] must [D] conduct actions dictated by "Higher-ups" [I] always and everywhere [default C], or else risk losing job [O].*
3. *Directors [A] must [D] make decisions [I] when action is controversial, not agreed upon by staff [C], or else risk losing job [O].*

In the first statement, approval is the action, and James has the authority to grant it. This authority is evidenced by the inability of Zoe to do anything about the new volunteer who she perceives to be damaging the site by holding workdays after a rainy day (the damage is soil compaction from people walking in the area).

Therefore, this is a choice statement that identifies James as the only person who can approve new stewards. The second statement (extracted from 2a and 2b) describes actions being dictated to staff, with no discussion or joint control; therefore, it is also a collective-choice statement. In the third statement, there is intervention by the higher-up staff only after the group has discussed and is unable to arrive at an answer because the decision is controversial or complicated by the needs of other departments. The higher-up then makes a decision with the insight of the group—this is a central part of the day-to-day job as the manager. Therefore, this is an aggregation statement.

Payoff Institutional Statements. Recall that payoff statements are prescriptions for which the alm involves paying or receiving something of value. For example, consider the following excerpts:

1a. *Interviewer: . . . this may not apply to you as [volunteers]. But are there ways that finances, that money actually limits what you can do?*

Ed: No.

Tim: [The organization] is very good about setting aside enough money for tools and herbicide. (Ed and Tim, volunteers)

1b. *But [organization A]—that was the source of the [project] money. And that money went to contract work to close up a ditch . . . in order to restore the original hydrology. And there's money there for contract burns. So, that was a source of outside money that allowed us to do something that we had wanted to do for a long time. But couldn't do ourselves. (Ed, volunteer)*

From these data, we derived the following institutional statement:

1. *Organization X [A] gives funds to volunteer groups [I] for some projects [C].*

The statement is a payoff because it involves an organization giving volunteers funds.

Other of our data suggested payoffs of a different sort; those that are neither monetary nor legal sanctions. For example, consider the following interview excerpts:

1. *Interviewer: What do you think is the best part about your job?*

Agnes: [Pause]. Relationships with the people, ya know, with the volunteers and regulars. (Agnes, volunteer)

2. *There's a lot of good things. I think it's truly, I guess having an actual impact in, restoration is the word, but I don't know that necessarily restoring versus enhancing or recreating. . . . But truly having a hand in the permanent restoration of the landscape. Because the [organization's] land is secure, basically forever. . . . And truly have an impact in that type of work is the best thing. (Phil, ecologist)*

3. *Getting out in the field and actually doing the work. I don't have any ambition to move beyond this position. I certainly would like to move on and up. But at the*

same time, you do that, then you distance yourself from what I truly enjoy doing . . . being out in the field and doing that work. (David, ecologist)

From these data, we derived the following institutional statements:

1. *Volunteers [A] may [D] receive rewarding social relationships [I] with enough time spent volunteering [C].*
2. *Restorationists [A] may [D] receive enjoyment and pride from seeing physical changes in the natural area [I] always and everywhere [default C].*
3. *Restorationists [A] may [D] receive enjoyment from working outside [I] always and everywhere [default C].*

These statements have clear payoffs in that the restorationists receive something of great value, even though that value is not monetary. In these statements, the aim is receiving positive emotions from conducting restoration work. The emotional response is not instigated by another person, but rather from the land and the restoration work itself.

Identifying the Type—Rules, Norms, and Strategies

In this section, we focus on the issue of parsing rules from norms from strategies (Table 4). To determine the type of statement, the deontic and the sanction must be identified. Unlike Basurto et al.'s (2010) coding of rules (in which an institutional statement was determined to be a rule only if a tangible sanction was explicitly stated), we were able to imply tangible sanctions from the interview data, and through an understanding of graduated sanctions operating in the case (Siddiki, Basurto, & Weible, 2012).

As we were coding for norms, we relied on Schlüter and Theesfeld's (2010) recognition of both positive and negative emotional sanctions (Figure 4). We coded statements as norms *only* when emotions were explicitly evoked by respondents as a response to (consequence of) an institutional statement (i.e., when there were clear delta parameters) and there was no tangible Or Else. Thus, despite an abundance of emotion in our interviews, we coded the majority of our institutional statements as strategies—institutional statements with no Or Else and no deontic.

Consider the following qualitative data excerpts and the corresponding institutional statements. The type of statement is different for each one because the sanctions are automatic (example 1), emotional (example 2), and tangible (example 3).

1. *If it's kind of business as usual, and we're burning these sections as normal, then—go ahead, I can make those calls. But if we're gonna vary that significantly and they want to, if I want input and "Hey, we're gonna do something new for burning." Then I would seek advice. . . Research has a real good understanding where thistles are burning, but now, if I was to burn any section that has not burned before, I would make that point to the research staff members. I'd say, "I'd like to do this. Here's why." And then we'd have the conversation.* (Val, manager)

Table 4. Using ADICO and the Type of Sanction as Criteria for Establishing Whether Institutional Statements are Rules, Norms, or Strategies

Type	ADICO Components	Sanctions	Additional Characteristics
Strategy	AIC	<ul style="list-style-type: none"> - Automatic consequences of not following (or following) a statement - Not established and carried out by another person - As such, there is no normative expression of obligation or permission (no deontic) - Not represented in the syntax (that is, no O for Or Else) 	<ul style="list-style-type: none"> - Amenable to change without collective action
Norm	ADIC	<ul style="list-style-type: none"> - Delta parameters, or emotional consequences of not following (or following) a statement - May be just as strong as (or stronger than) rules in influencing behavior - May be graduated - Not represented in the syntax (i.e., no O for Or Else) - May also have automatic sanctions 	<ul style="list-style-type: none"> - Can change over time
Rule	ADICO	<ul style="list-style-type: none"> - Tangible consequence associated with not following (or following) statement - May be graduated - Represented by Or Else (O) in the syntax - May also have emotional and automatic sanctions 	<ul style="list-style-type: none"> - Requires previous collective action process to establish rule - Rules required to establish a monitor

2a. *We're pretty fortunate with our staff. Sue's been here twenty-five years. John, the plant ecologist has been here for twenty... So we're pretty fortunate.* (Phil, ecologist)

2b. *If I had a problem, I'd tell Sue. Or if I felt we weren't doing something—especially if we're burning. She'd always ask, "Do you guys feel comfortable with this burn, or do you have any concerns or anything like that?" And she always gave us... Any one of us could say, "No, I don't feel... The winds feel too strong." So, we could always have that option to call off a burn or anything like that.* (Kevin, ecologist)

2c. *Because, you know, but I'll take responsibility for it if there's a problem. And I think they know that.* (Sue, operations manager)

3a. *Interviewer: A little light bulb went on. Volunteers can go talk to board members.*

Manny: Exactly, I can't. I'm actually in violation of the law if I go talk to an elected official. Let's put it this way: If I go talk to an elected official to complain, the way I understand it, I'm breaking the law. On the other hand if I get a phone call from the boss and he says take board member so-and-so and give him a tour of such-and-such and explain to him what's going, that's okay. But for me to call up

and sit there and go, “you know, this is horrible, we shouldn’t be doing this”—the volunteers can do whatever they want. If they don’t like my decision they can go to our [boss] and say, “I don’t like Manny’s decision. I want this changed.” Whereas, I can’t go to [our boss] and say, “you know what? Heather made the dumbest. . .” I can’t do that! That’s insubordination. But yet, they do that to us all the time. (Manny, operations manager)

3b. Interviewer: Can you offer feedback to the board about who you would like to appoint?

James: No. We’re not supposed to. We’re not supposed to talk to politicians. Unless I get permission, I’m not supposed to talk to board members. (James, volunteer manager)

From these data, we derived these institutional statements:

1. Manager [A] may go to research staff with management questions [I], particularly about burning [C].
2. Ecologists [A] should [D] go to Sue with restoration questions because she is experienced [I] always and everywhere [default C].
3. Staff [A] must not [D] talk to board members [I] ever, unless given permission [C], or else risk losing job [O].

We coded the first statement as a strategy because there is no evidence of an emotional or tangible sanction for communicating with research staff; in fact, when pressed, the respondent suggested the urgency to solve a conflict, or avoid one altogether, was being inflated. To Val, that interaction is an established action designed to ensure that all of the organization’s goals are accomplished. In the second statement, while there is no tangible sanction (Or Else), there is an emotional sanction, making this statement a norm. As shown in the quotes (2a and 2b) from Phil and Kevin, the positive consequence is esteem and respect for a colleague (Sue), and, perhaps, pride for the colleague herself (2c). Almost everyone interviewed from this case alluded to this collegial esteem, built over years. More broadly, this organization talked about having “mutual support for each other,” and they pride themselves on not having a written management plan and instead opting to regularly discuss plans together. In the third statement, it is clear that communication with the Board is not allowed, and that insubordination is an absolutely forbidden action. We can imply that committing insubordination may lead to dismissal from one’s job. Therefore, with such a tangible sanction, this is a rule.

Applying the concept of emotional sanctions, or internal deltas, to extracting institutional statements bears another example. Consider the following interview excerpts, about communicating with colleagues and providing input on restoration decisions:

1a. So you have to follow up on these sites. That’s why. . . literally, I might go tour it and I might say to Jerry, “Hey there’s an outbreak of these, and you know, we need to put it on our list.”

Interviewer: So you might go out there on your own, and take a walk?

Jeremy: Yeah, sure. Some of us will do that, often . . . often, actually. (Jeremy, volunteer)

1b. So Jerry, I would definitely say, sets the agenda. But Jerry is also, you know, he's a good listener and he'll listen to other people. But I would say Jerry is definitely the most decisive and the one who has established the goals and established the strategy. And I've certainly talked to him, you know, given him my input, etc. Given him ideas. Given him suggestions and many other people have too. But it's very informal. Jerry's the director of restoration and other people kind of get their ideas in and, you know, we kind of act. . . . We reach a consensus pretty. . . . It's not formal. It's very informal how we reach consensus. You kind of talk about stuff and Jerry kind of drives it. (Maria, volunteer)

2. . . . We don't have good lines of communication, and we're not forced to. So, [staff] can do stuff and not really have to tell us . . . until something happens there that he doesn't like. Or, it can be my telling [another organizational subgroup] something, that I gave my approval. We just haven't really developed a team approach to things.

Interviewer: You're saying that there are some in the [Organization] who are like "let us take care of that, we don't need to discuss it with you?"

James: Or, "We're going to do this whole. . . . project and we're not going to tell the [volunteer] steward about it. Or the Volunteer Manager." That happens a lot of places, where we do things and we should be including the stewards. Or, Tom has asked for the thinning of certain tree species and our lead ecologist has agreed with that in principle, but when push comes to shove to do it . . . I don't know if that's a control issue, or . . . so, it's that kind of battle. (James, manager)

From these data, we derived the following institutional statements:

1. *Volunteers [A] may [D] give input on site goals, make observations, and give suggestions [I], when possible [default C].*
2. *Staff and volunteers [A] must [D] communicate [I], when possible [default C].*

Both statements are norms, the first with a positive emotional valiance and the second with a negative emotional valiance. For the first statement, interview data (1a and 1b) suggests that providing input is both desired and encouraged, and the positive sanction is group inclusion. In contrast, the second statement is associated with the negative consequence of conflict arising from the lack of communication, in which the negative sanction is, quite overtly, a "battle."

Ascertaining if a Statement Is Shared

Recall the definition of an institutional statement: "a *shared* linguistic constraint or opportunity that prescribes, permits, or advises actions or outcomes for actors" (Crawford & Ostrom, 1995, p. 583, emphasis added). Therefore, a final step in determining if something is, indeed, an institutional statement, is determining if it is shared among people in the given decision making situation, or used only by

someone acting independently. One way that we approached this was to look for related statements from respondents in a given case, and then across cases. For example, the following strategies conflict on details: “remove two-thirds of a seed population” and “remove three-fourths of a seed population.” However, there is a larger shared meaning behind these operational statements: restorationists should leave some percentage of the base seed source intact.

Looking for statements said by more than one person is an obvious way to look for shared statements, but not the only way. We turned to our other data—related statements, observations, and interviews—to check for evidence of their shared nature. We looked for contradictory evidence as well. In all but one case, we did not have institutional statements that substantially contradicted each other, and so in most instances we accepted an institutional statement as shared if there was no evidence to the contrary. In the one case with contradictory evidence, we required direct evidence of shared use. We felt this was sufficient for assessing ecological restoration, a relatively low-risk endeavor. If we had been using institutional statements to study decision making in a trauma center, for example, we would have used tighter standard of what constituted a “shared” rule, norm, or strategy (Miles & Huberman, 1994).

Results and Discussion

In this paper, we illustrated the process we developed to extract institutional statements from interview data with people active in oak woodland restoration in the Chicago Wilderness region. Well over half of the 1,700+ institutional statements we extracted were strategies, the rest roughly split between norms and rules, although there were more rules than norms. We discuss below the ways in which this work informed our research questions, and some of the issues we faced with the extraction process.

By looking at the full complement of institutional statements, we found seven shared principles across all of the restoration groups, including attention to *qualifying* outcomes and outputs, such as invasives removal or seed gathering, rather than relying on the *quantitative* measures more common in extractive natural resource situations (e.g., allowable catch). Several of these principles are rooted in shared norms (rather than rules), such as “listen to the land,” which captures the extent to which restoration practitioners turn to the land itself for guidance regarding appropriate actions to take (Watkins et al., 2015). At the same time, we were also able to differentiate between groups at a fine scale. Quantifying the numbers and types of institutional statements-in-use proved to be very useful, even critical, to integrating our word-based social science data with the numbers-based ecological field data collected by our colleagues. This process allowed us to use the appropriate research techniques to get the in-depth information about the restoration decision making process while also being able to effectively integrate these data with the ecological data collected on biodiversity at each of the sites (Westphal et al., 2014). This is not an easy divide to bridge, and was an effective use of the ADICO grammar.

Two aspects of the framework were either difficult or less useful in our project. The level of statement was not useful in our data. It could be that in other research or practice contexts the operational/collective-choice/constitutional differentiations would provide insight, but in our on-the-ground research context, it did not. We were challenged to differentiate between scope and choice categories in our data. We believe this is because ours was interview data about restoration activities, in which a simple change of phrase can shift the focus from an outcome to a choice and vice versa.

Other institutional statement types were of more use in our analysis. Aggregation statements indicated where there was more (or less) shared decision making. Information statements were helpful in identifying the pathways for communication, and combined with position and boundary statements, helped identify ways that groups had effectively solved problems (or not) within their restoration groups. We were able to use the aggregation and information statements, and the patterns they highlighted, in our agent-based models. With these models, we were able to test how inserting an institutional statement (or suite of related statements) into a different system might affect the decision-making process in this other group (Watkins, Massey, Brooks, Ross, & Zellner, 2013; Zellner et al., 2014).

Incorporating Schlüter and Theesfeld's (2010) work on sanctions as a defining mechanism for what is a strategy, norm, or rule helped overcome some of the challenges inherent in trying to extract institutional statements from interview data. Focusing on the types of sanctions that accompany an action helped us to classify them. While norms were fewest among our institutional statements, there were a significant number of them, and analyzed in the context of the full dataset, it was clear that norms were very important in guiding restoration decisions. Curiously, we found that manager-led cases had the most norms. That is, a larger percentage of the institutional statements in the more bureaucratic organizations were norms, as compared to the other management types (research-led and co-managed were roughly equal in the number of norms). This is somewhat counterintuitive—one might expect norms to be more influential in a volunteer group than in a paid job in a bureaucratic organization, but for organizations in our study, this was not the case. The importance of norms in guiding restorationists' behavior suggests that we need to know more about how norms, and not just rules, work in various social-ecological systems.

We found that occasionally the institutional statements our respondents discussed was not in use, but one they *wished* was in use. We documented these "desired statements" as a reflection of actions and outcomes restorationists wished were in effect, but were not. Such statements are not in the formal syntax, but desired statements could play a key role in any longitudinal analysis of an organization or decision-making process, providing insight into whether and how statements-in-use change over time.

We also found insight in the one case where we had real discrepancy and contradictions in the institutional statements, and a high number of "desired statements." These indicated the dysfunction present in this group. The dysfunction was something that some of the members in this case were aware of, but the extent and depth of the dysfunction was made very clear by the large number of contradictory and

desired institutional statements. This was useful from an analytic perspective, and also for potentially providing suggestions to improve the functionality of the decision making within this group.

Concluding Remarks

Our application of IAD and ADICO were novel in at least three ways: our data were qualitative interviews rather than policy documents, ours was a nonextractive natural resource situation, and we used the institutional statements as data in subsequent modeling and analysis integrated with ecological data to answer questions about a social-ecological system. The statement extraction process was difficult, but also produced meaningful outcomes and lessons learned. And while rules were prevalent for the restorationists we studied, we also found that norms played a very meaningful role in guiding decisions. Our work raises several important issues that can inform future research projects.

Our assessment of the institutional statements was useful in refining agent-based models of reaching consensus (Watkins et al., 2013; Zellner et al., 2014), and this points to a next step for application of the IAD and ADICO: apply it to addressing problems in real time. Pre/post interventional studies based on an in-depth understanding of institutional statements-in-use in a given social-ecological system could go a long way to help understand both the usefulness the ADICO grammar, and also provide solutions for problems faced in the real world. For example, would suggesting some process changes based on institutional statements for the one case discussed above that was rife with discord be useful in achieving smoother functioning in that organization?

With additional application, the role of norms will become more clearly understood. With that understanding, applying the grammar could help develop a clearer sense of when the focus of policy interventions should be rules, when the focus should be on norms, or when both need to be addressed. We expect that norms will be prevalent in extractive situations, too, but this has yet to be established. Desired statements are also worth further investigation, as they lent depth to the understanding of the decision-making process. Such statements would also be useful in a longitudinal assessment of an organization. How often and under what circumstances do desired statements become statements-in-use, and when do they not? This type of analysis could provide insight into the evolution of organizations and the institutional statements that guide them.

ADICO has yet to be widely applied, particularly to qualitative data, perhaps because, as compared to policy documents, people don't talk in institutional statements. We hope that the way in which we have described the challenges inherent in analyzing qualitative data to uncover institutional statements, and steps we took to handle these challenges, will help others use the syntax more explicitly—in more social-ecological systems and with a variety of data types. It is only through such applications that we can determine the usefulness of the syntax in understanding not only what institutional statements are used, but which ones contribute to successful natural resource management. With further study, scholars may develop a

procedure by which researchers or practitioners could identify when conducting a detailed extraction of institutional statements would be beneficial, when looking at norms may be more effective at reaching policy ends than only addressing rules, or when attention is needed across all three—strategies, norms, *and* rules. By gaining such understanding, we will have one more useful tool to help create sustainable social-ecological systems.

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Note

1. The data we present may also be a source for other Institutional Statements than those we highlight in each section. We want to stay focused on specific points, and indicating all of the Institutional Statements each data example supports would reduce the clarity we aim for.

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Knot Policy Theory

Christian Breunig, Chris Koski, and Samuel Workman

This research note synthesizes the main theoretical frameworks in public policy. The concept of policy knots ties policy cycles, multiple streams, punctuated equilibrium, and other frameworks into one useful analytical tool. We introduce two particular policy knots—the granny knot and the clinch knot—to demonstrate the utility of the concept. As an illustration, we examine climate change policy in the United States in order to show the challenges of tying and securing a policy knot.

KEY WORDS: punctuated equilibrium, advocacy coalition framework, public policy, agenda setting, climate change

After nearly two decades of mostly peaceful coexistence (Sabatier & Weible, 2014), scholars in public policy are increasingly dissatisfied with comparing and contrasting major frameworks, notably: the Advocacy Coalition Framework (ACF) (Sabatier & Weible, 2007), Institutional Analysis and Design (IAD) (Ostrom, 2009), Multiple Streams (MS) (Kingdon, 1995), and Punctuated Equilibrium Theory (PET) (Baumgartner & Jones, 1993). Calls for synthesis and cross-fertilization, even wholesale integration, have become more common (Cairney, 2013) and a reorientation toward other subfields is proposed (John, 2015). Inspired by an attempt to integrate policy process theories (Howlett, McConnell, & Perl, 2015), we offer a unifying concept and a bundle of theoretical mechanisms that tie major existing policy theories together: *policy knots*. We set the stage by reviewing the policy-weaving theory of Howlett et al. (2015). In the second act, we introduce policy knots and bind them to some of the major policy process theories. Finally, we use climate policy as a quipu for illustrating policy knot theory.

Policy Weaving and Its Loose Threads

Howlett et al. (2015) lay out a weaving metaphor for integrating scholarship on the policy process that they argue converges conceptually and diverges theoretically. In developing the weaving metaphor, Howlett et al. fuse two grizzled veterans of policy process theorizing in the stages (Anderson, 1975; Lasswell, 1956) and multiple streams frameworks (Kingdon, 1995). While Howlett et al.'s patterning illuminates a different perspective on the synthesis of policy theory, we see deficiencies in the

metaphor's conformance to recent frameworks in public policy research. In particular, the weaving metaphor leaves open questions of policy stasis, endogenous change, and major disruptions in the pattern of policy and politics.

The weaving metaphor and its analytical treatment is an attempt to pacify the policy process literature by tying together strands of scholarship that are supposedly dueling for analytical supremacy. We contend that the weaving metaphor loses sight of the fact that extant frameworks of cycles and streams are already woven into the fabric of these extant theories. Thus, we argue that policy weaving is an insufficient metaphor for durable policy change. Rather than reweaving, we propose a counter theory of *policy knotting*. Policy knots tie problems, solutions, and politics tightly and snugly together, binding multiple strands of policy theory and more fully characterizing real-world knots. Policy knots secure policy change by tying and interweaving in a process we label "cinching."

The cinching of policy knots relates directly to a central weakness in the weaving metaphor. Weaving leaves the overall impression of a very fluid, methodical process of integrating strands of inputs to form policy fabrics. One imagines the skilled member of a guild weaving beautiful patterns in a rural setting. However, all extant frameworks of the policy process, including multiple streams and policy stages, are alert to the sometimes disjoint nature of policy dynamics as we lurch from near stasis to reform. In other words, the weaving metaphor leaves open the question of how the selvedge of the policy fabric is constructed—a knot, or more likely a series of policy knots, must be formed for durable policy change.

The ease of cinching strongly relates to many existing conceptual features of public policy. First, some policies for given issues, or considered in particular venues, are more easily cinched than others. Cinching policy knots around preferences and coalitions that form for mitigation of *climate variability* has proven considerably easier than cinching around the idea of human agency in *global warming*. Second, the ease with which a knot is uncinched is as important as the ease with which it is cinched. Disentangling the strands of a policy knot relates to how path dependence bears on policy outcomes. In other words, policy knots whose cinching cannot be untangled, but must be cut completely, tell us much about how both the agenda setting and policy formulation stages of the policy process are constrained by policy knots at critical junctures. Further, policy knots that "lock in" preferences of the tying coalition and must be cut if change is desired, also lock in the very same disjoint policy dynamics discussed above and in the wealth of literature on public policy. In other words, punctuated change results from knots cinched so tightly that they must be cut.

Another weakness of the weaving metaphor is its lack of characterization of endogenous or emergent policy change and stasis. As anyone with laced shoes who has walked through brushy areas at night can attest, very small perturbations in the "undergrowth" of a policy area may produce emergent policy knots of incredible intractableness. When one considers the positive feedback associated with a particular strand being slightly out of place or looped wrongly, it is clear that not only can a policy knot emerge, completely absent concerted effort by a weaver, but that positive feedback might produce a knot that cannot be modified, and must be cut. In other

words, the weaving metaphor, with its orderly loom, gives the somewhat false impression that the path to policy fabric is clear, and in the words of Herbert Simon, “decomposable” (Simon, 1962, 1996).

Finally, in a point related to the discussion of cinching above, we argue that the weaving metaphor is better able to describe policy change than policy stasis. We believe any metaphor of the policy process must capture both dynamics of policy change. Policy knots handle policy stasis descriptively very well, and when augmented by our notion of cinching, relate directly to the types of lurching policy dynamics that are observed the world over in the literature on public policy. In particular, we introduce the idea that some policies are characterized by granny knots—policy knots so entangled that they guarantee stasis until completely cut away.

Policy Knots and Their Relation to Major Policy Theories

Windows of opportunity emerge with the availability of new threads (issues), new weavers (entrepreneurs, changes in government), or new looms (new institutions or alternative venues). New threads are often the result of frayed or broken threads from previous knots. Broken threads become the beginning for new policy knotting—the “bitter end”—while still-knotted threads provide stability to governments (these are termed “standing ends”). Policy knots experience friction if the fabrics woven together are abrasive—such as when agency missions fail to match the goals of policy. Policy knots also experience friction when multiple actors attempt to retie knots or pull in multiple directions on the same knot—these knots can become difficult to untie over time making them impervious to even the most minor tinkering (this is the policy granny knot, aka gridlock). A short discussion of granny knots in policy illuminates key characteristics of policy issues as they relate to partisan alignments and institutional gridlock. Figure 1 displays the policy granny knot.

Policy granny knots have the curious property of “keeping the ends out for the ties that bind” (Cash, 1956). That is to say, granny knots adequately describe both issues for which there is vigorous partisan agreement and those for which there is intense partisan conflict. Both of these configurations of issues and partisan alignments lead to granny knots and hence difficulty enacting policy reforms.

Given the politics of policy granny knots, issues exhibiting both high degrees of ideological uniformity and those exhibiting extreme conflict are difficult to reform. In the case of the former, elite ideological agreement on the course of policy means that the agenda for change is highly constrained and that path dependency is likely. In the case of the latter, the policy granny knot is cinched by partisan and ideological polarization, making policy reform impossible outside of cutting the knot—major institutional change. Policy granny knots are a particular class of models derivable from a more general approach to policy knotting.

The theoretical strength of our approach is that problems, solutions, and politics can be tied together in nearly infinite ways but with the same goal—securing policy change. We outline a simple model of how policy knots can come together. Figure 2 provides but one illustration of how a theory of policy knotting can be applied to the policy cycle, aka the stages heuristic. Many versions of policy theory may, in fact,

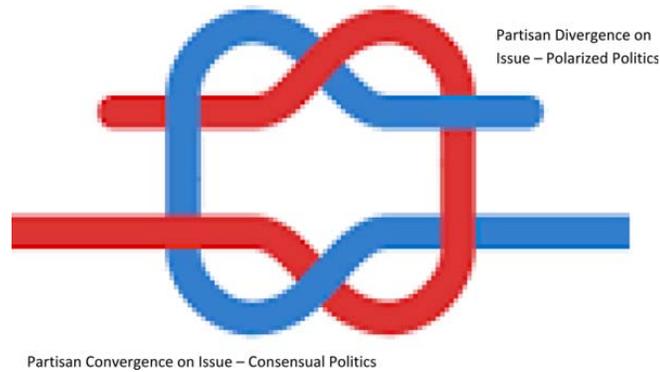


Figure 1. Illustration of the Policy Granny Knot with Typical Issue and Partisan Alignments.

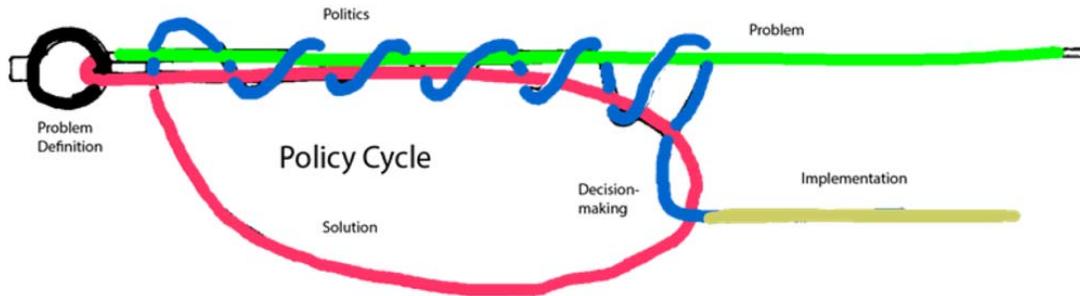


Figure 2. The Policy Knot Metaphor as a Clinch Knot and the Policy Cycle.

view the policy process not as an attempt to continuously weave solutions into the future, but, rather, cinch down issues to clear agenda space for other solutions chasing problems.

Policy knotting subsumes all dominant schools of policymaking and theorizing. As the clinch knot in Figure 2 illustrates, policy knotting unifies insights from the policy cycle and MS framework. Punctuated equilibrium theory (Baumgartner & Jones, 1993; Baumgartner et al., 2009) is a subset of policy knotting where tight policy knots can be loosened up and then reconfigured into new knots (“shoelacing”). Shocks in PET can result from “jammed” granny knots finally being loosened, or broken, or cut away. Such knots are often “capsized”; that is, versions of policy that no longer resemble the preferences of the current policy positions. Capsized knots can be purposeful as the result of different subsystem politics or accidental because of a number of actors constantly tugging at different threads. Negative feedback results from subsystem actors attempting to improve knots before they capsize in a process known as dressing. However, in many cases, knots are ill-dressed and knots capsize leaving the thread to experience extreme tension. The point at which the string breaks can be thought of as the “bite” and it is here that new knots can be formed through splicing.

Policy knotting can be interlaced with the advocacy coalition framework. Coalitions—typically two, but sometimes more—act on different strings in the knotting process. Over time, coalitions learn how to tie different types of knots, or how to disrupt the knots of other knotters. Coalitions can converge to produce mutually preferred knots—or blood knots. Successive iterations of successful policy knotting

avoid the devil shift to produce a tapestry of knots associated with policy learning. Ultimately, coalitions can learn to produce a complex, long-term policy agenda not unlike a friendship bracelet.

Policy network models (Kenis & Knoke, 2002; Rhodes, 2008) are a natural extension of policy knots; they are characterized by multiple knots, some of which define the border of the policy domain while others provide the quilting, the central and binding nodes of the policy knot network. Different knotting strategies can produce stronger or weaker networks. Indeed, sociological work (Granovetter, 1973) even claims that weak ties in networks can produce strength.

As is described, policy knot theory is not a weaving theory, but one that intends to understand different types of threads and the machines that weave them. The concept of power is “loosely coupled” almost as an afterthought in the “weaving” framework of Howlett et al. (2015, p. 11); the metaphor then describes different “hands”—it would seem that in uniting frameworks of policy, the framework has not made the tough choices in deciding how a scholar might go about employing the framework. A theory of policy knotting incorporates the concept of power as the capacity of actors to pull tightly on various threads within the policy process. Stronger actors are better able to knot policy fabrics with coarser materials or create more intricate policy tapestries with multiple strings. Strong structural knots become the selvedge of “policy regimes” (Jochim & May, 2010)—that is, the boundary that defines different woven products from thread.

Complex policies (Weber & Khademian, 2008) can be understood through the lens of multiple weavers working in concert to knot several related, but disparate, threads or fabrics together. We term the application of knotting theory to complex policies “quilting,” which can be used to understand the mosaic of policy working on wicked problems. Key policy entrepreneurs can couple together different selvedges—we call such threads “weft.” Thus, policy knotting can be used to understand the difficulty in crafting policies with a sufficient number of knots to produce a result that really ties the room together.

Policy Reform

Much of this theoretical exercise has focused on the tying of new knots or the cutting of old knots to make room for new knots. Indeed, policy reform is missing from “weaving” metaphors; this is likely because reform is viewed as policy change like any other. However, policy reforms are a substantively important type of policy change that must be explained by policy knotting. We explore the possibility of untying knots to retie (or “fix”) problems left by improperly tied knots or knots that bind future knot-tying activity. These can be thought of as reforms—or “reties”—to policy rather than overhauls. As Patashnik’s (2008) work notes, the reform process is a significant challenge for governments given the difficulty in untying existing policy arrangements, but also retying knots that are sufficiently strong to endure new pressures placed upon them.

Untying a policy knot is dependent upon two general foundational features of the knot: the thickness of the strings and the form of the knot. Thicker strings are easier to

untie than thin strings; in this case, string thickness is related to the number of different interests that are represented in the policy knot. Thinner strings represent narrower subsystems where few interests can dominate policymaking; in these cases, it is far easier to simply cut the knot and begin again at the bitter end than attempt an untie. Thin string knots are in keeping with punctuated equilibrium theory, which suggests that these sorts of knots must be cut given their distance from the status quo. Thicker strings are seen often at the international level with nonbinding resolutions at the United Nations—even binding resolutions ultimately are the result of serious compromise that sovereign nations can choose to ignore (particularly powerful nations).

Second, the form of the knot is a challenge for any entrepreneur attempting reform given the nearly infinite number of knotting techniques that exist in policy design. As policies are implemented, pressures build on knots to get tighter and eventually knots capsize into some derivative of the initial knot. For example, the Clean Air Act (CAA) has been recently interpreted to include carbon dioxide as a hazardous air pollutant given its capacity to contribute to global warming thereby empowering the Environmental Protection Agency (EPA) to regulate greenhouse gasses. The original knot (CAA of 1972) has been tightened by environmentalists such that the current knot, while still retaining the overall knotting technique of the original, is capsized into a stronger knot. Untying the CAA policy knot is simply unthinkable; new methods of addressing climate change in the United States depend upon tying entirely new policy knots comprised of different thread thicknesses (constellations of interests). These interests promote thicker threads given their relative ideological distance—environmental groups, utilities, and energy providers must work together to form new climate change legislation. Agreements are likely to be less binding if for no other reason than the material with which the knot is tied will be easier to untie.

However, real reform is possible—even in the cases of multiple types of knots, using thin thread, that are pulled to the point of capsize. Skillful entrepreneurs can navigate untying these series of knots through the use of unique tools, brute force, and agreeing to tie particular knots for specific parties. Ultimately, there is no exact way to untie a knot, but this does happen. Rather than pulling, entrepreneurs can attempt to encourage stakeholders to push on their sides of the knot in unison. Some type of tool—such as forceps, pliers, even a bamboo skewer (metaphorically speaking, see Figure 3)—can be used to leverage interests away from bound positions. In some cases, attacking the policy knot with a barrage of brute force—such as significant media pressure—can loosen the knot enough such that a tool can enter a crevice to begin the untying process (e.g., presidential detailees to congressional committees).

Successful reties result from unique knots that distribute knot-tightening across multiple actors; moreover, these knots are also tied using fabrics that stay tight. One of the challenges of reforming public policy is that arguments made in favor of reties are often that the policy process in general should be made amenable to changes over time. Thus, reformers will allow for clauses in legislation to review the knot-tying process in the future—analogue to the “highwayman’s hitch” and other “self-untying knots.” That is, opportunities to unravel the entire policy exist in the future so as to curry favor with skeptical members of the legislature. In the United States, these are often referred to as “sunset clauses” and are shown to be effective in

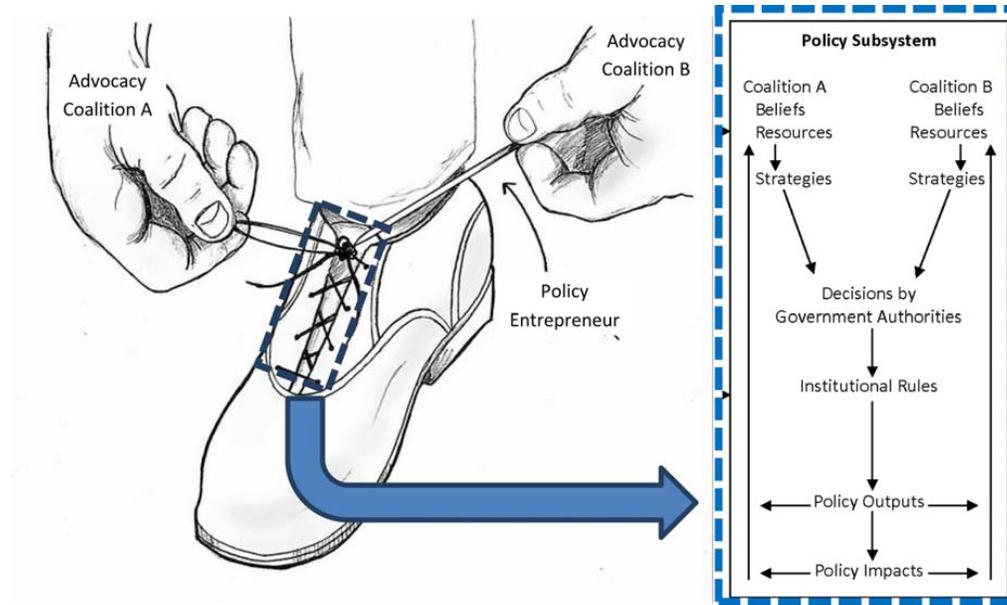


Figure 3. Untying a Particularly Hard Knot Using an Unique Policy Tool. This Figure Ties in the Advocacy Coalition Framework into the Knot Policy Theory to Describe How to Leverage Challenging Knots.

Source: Hageman (2013).

building consensus, but also in totally unraveling reforms (see, e.g., the assault weapons ban of 1994).

The passing of the Affordable Care Act in the United States illustrates the process of untying and retying policy knots. The Obama Administration was able to convince the insurance industry to push on the ends of their policy strings in addition to most members of Congress in the Democratic Party. Specific members of Congress—for example, Ben Nelson—were offered particular knots of their own to lend their support. Of course, the reform was imperfect—the Tea Party emerged on the scene to provide pressure to the extant knot of American health care policy such that total reform was impossible. The policy was designed to constrict each knot over time—particular provisions were tightened right away (such as children up to 26 years of age staying on their parents' health-care plans), while others took longer (such as the “Cadillac tax” on health-care plans). Republicans in the House have attempted to untie the knot repeatedly (six votes to repeal it in its entirety; 54 votes to repeal particular provisions), but the knot is too strong. Even still, Republicans attempted to unravel the entire knot, which hinged greatly on the highwayman's hitch of the individual mandate by suing the federal government in the Supreme Court. Thus, far the hitch has held; continued failed attempts meet with renewed resistance making a retie of this knot (the Republican “repeal and replace” strategy) less politically viable.

A Quipu of Climate Change Policy

At this point, our policy knotting framework is nascent such that no particular research design is appropriate, but patterns of policymaking emerge from illustrative

examples. Climate change policy in the United States—as well as globally—is a particularly wicked problem, the solutions to which have been at times *ad hoc* and otherwise coordinated through organizations that advocate for subnational solutions to climate problems (Hoffmann, 2011; Nelson, Rose, Wei, Peterson, & Wennberg, 2015). We can think about this as a “quipu,” which is a rope with knots, color-coding and off-branching cords—in other words, knots that are tied in a quipu are independent strands of policy (subnational efforts) that reside along the same broader rope (global climate change). Specific to the United States, federal intervention has been late in coming and has derived authority from an interpretation of carbon dioxide as a “hazardous air pollutant.” Such status allows for the federal government to regulate carbon dioxide under the CAA and subsequent amendments; however, many legal and policy scholars have suggested that this is an imperfect mechanism by which to address a problem that is bigger than simple air pollution. Moreover, as Rabe (2011) has noted, the issue of federal intervention is a growing intergovernmental quagmire given that the supremacy clause of the U.S. Constitution allows for the federal government to displace extant state law. Arguably, an interpretation of climate change regulation as authorized by the CAA places federal intervention generically in front of state intervention (excepting, notably, the California Air Resources Board). However, should a new statute specifically designed to tackle climate change be created in the United States, there is precedent for state laws that predate federal environmental policies to apply for waivers that enable states to enact stronger policies in the future. The current system of compensatory federalism (Derthick, 2010) is one that can be viewed through the policy knot framework.

The case of climate change policy at the national level in the United States is a demonstration of a tight “granny knot” from partisan divergence on what is a wicked problem. Partisan polarization tightens the granny knot of inaction; so, multiple inferior knots are tied by multiple hands (states) to put together a quilt of policies that are inferior to a simple knot from problem (climate change) to solution (federal climate policy). A new unified climate policy would be stronger than all these knots combined—directly providing a connection to the selvages of other policy fabrics. However, the new policy would likely have to deal with a series of knots that impede direct policy knotting—for example, CAA interpretation, state-level climate actions, local climate action plans—the new federal knot would require in part that these smaller knots be dealt with (Engel, 2009). In many cases, the knots at the subnational level do not share the characteristics of the granny knot—partisan divergence is not strong; the hands pulling the knots do not need to exert much effort because of general agreement; and, in many cases, the knots are intended to move somewhat (subsequent interactions of the policy knotting framework might look into this phenomena we tentatively call “slipknotting”). Some extant subnational climate change policy knots may be untied; others that have been made in the absence of a stronger policy knot may create weaknesses at the bite of the string. Breaking existing bites will lead to bitter ends in search of new linkages—that is, governments have layered a series of environmental goals within climate action plans; if those plans are superseded by a federal policy plan, and these knots are broken, then, new knots related to these environmental goals may be tied.

Ultimately, the goal for federal climate policy—like all policy areas—is to create a knot so strong that people will not attempt to break it and other knots can follow that work toward the same goal. Occasionally, these holder policy knots can be pulled to the point of capsizing—that is, the knot no longer resembles its previous self or is unfit for future tasks. In extreme cases, this can lead to a “rat’s nest.” The extension of the CAA to climate policy can be thought of as a capsized policy knot—certainly, this is a possible use for this knot, but such stretching makes the knot vulnerable to fraying in the future.

Conclusions

We must be careful when tying these knots (Meier, 2009). We must be careful when applying knot theory or weaving theory or any other theory that attempts to master complicated theoretical strands of fabric to fit particular goals of creating the same pattern of the policy process over and over again (Sabatier, 1991). Tying too many knots can lead to the dreaded “tangle”—which is not a term relevant to policy, but to the *attempt* to understand the policy process itself. The policy process is exceedingly complex in reality. To grapple with this complexity, early versions of policy theory simplified this process and provided the initial foundation upon which future theories might be indebted. Uniting complex policy theory under a grand unified vision is more likely to tangle than to clarify.

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Network Bibliometrics of Public Policy Journals

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Analyses of academic networks typically rely on bibliometric data to reveal intellectual structures and communication links. Using data compiled from Journal Citation Reports, this research reports the key networks of seven general public policy journals: Journal of European Public Policy, Journal of Policy Analysis and Management, Journal of Public Policy, Policy Sciences, Policy Studies, Policy Studies Journal, and Public Choice. Two journals had strong links to economics journals, three had moderately strong links to political science journals, and two were highly multidisciplinary. Articles in these seven journals seldom referenced each other but more often cited prominent political science and economics journals; self-citations were comparatively high. Often cited by journals across a wide range of fields, six of these seven policy journals have achieved high citation rates that put them in the top tiers of journals.

KEY WORDS: citation networks, bibliometrics, public policy journals, political science journals, economics journals

What can we learn about the field of public policy by examining the citation networks of its leading journals? What do bibliographic patterns reveal about links to disciplines such as economics and political science (interfield networks) and about the links among public policy journals themselves (intrafield networks)? And what might the degree of fragmentation or integration among its prominent journals suggest about the current state of the field? Network analysis is used here to explore the answers to all of these questions.

Since Laurence O'Toole in 1997 famously urged researchers to "treat networks seriously," scholars have increasingly done just that. *Policy Studies Journal (PSJ)*, for example, had published no more than a half dozen network analyses in the prior 15 years, but this was an idea whose time had come (Popp, Milward, MacKean, Casebeer, & Lindstrom, 2014). In the 1999–2014 period, *PSJ* published over 30 articles about policy networks related to a wide range of topics (e.g., housing, economic development, education, transportation, the environment, and social policy) as well as methodological and theoretical aspects of network analysis (e.g., deLeon & Varda, 2009; Robins, Lewis, & Wang, 2012).

As O'Toole acknowledged, network analysis was pioneered by scholars in other social sciences. Borrowing from sociology, psychology, computer science, and

economics, network analysis in public policy is itself evidence of a certain type of cross-disciplinary transmission network. The year after O'Toole made his appeal, MacRae and Feller (1998) used network analysis and its tool, bibliometrics, for a first systematic look at connections among public policy, public administration, political science, and economics journals. Bibliometrics uses citation patterns to discern socio-cognitive structures of the intellectual organization of academic communities. Citations are seen as documenting status hierarchies, recursive legitimation, and intellectual networks of researchers, theories, methodologies, and topics (Leydesdorff, 2011). One journal, *Scientometrics*, is devoted entirely to studying research communication and networks in academia, often using bibliometric analysis as the methodology of choice.

Economics has a history of bibliometric introspection that goes back to the 1970s (Eagly, 1975; Lovell, 1973; Quant, 1976). More recently, a network analysis of 42 economics journals along with leading journals in 9 "sister disciplines" (Pieters & Baumgartner, 2002) found links that were largely unidirectional. Aside from finance, economists largely ignored other disciplines, while others incorporated economics citations far more often. Political science and related social science journals have received only scattered attention from bibliometric network researchers (e.g., Rigby & Barnes, 1980); most analyses have focused on journal content rather than citation patterns (e.g., Waismel-Manor & Lowi, 2011).

Eric Hanushek (1990) speculated that the practice-oriented literature of public policy and public administration would draw heavily on traditional disciplinary journals, but that the information flow would be largely one way, with traditional social science journals rarely taking notice of public policy research. Testing that notion, MacRae and Feller (1998) found just such a unidirectional flow, with the *American Economics Review* and *American Political Science Review* cited far more often by the *Journal of Policy Analysis and Management*, *Policy Sciences*, *Policy Studies Journal*, and *Public Administration Review* (PAR) than the converse. At the same time, MacRae and Feller found evidence of a "loose cluster formed by the links among the four practice-related journals," but those links were weak in the 1989–90 period they studied. Thus, not only were the applied ("practice-related") journals rarely cited by disciplinary journals, the applied journals were only slightly more likely to cite each other.

MacRae and Feller (1998) suggested that these overall patterns were due, as Hanushek's (1990) logic predicted, to disciplinary journals' disinterest in applied research, preferring to draw on an "intellectual field" that is more "clearly defined" than that of the applied public policy and public administration journals. Overall, MacRae and Feller found that, compared to disciplinary journals, three major public policy journals (plus PAR) had little consensus on source journals, relatively fewer same-journal citation rates, and relatively few mutual citations between applied journals.

Over two decades later, do these patterns continue among leading public policy journals? Public policy is, of course, a notoriously thorny academic arena drawing on rival disciplines, diverse methods, and varied foci. From the outset, scholars struggled with public policy's messy multidisciplinary identity. Initially, public policy was envisioned as ultimately fusing into a unique new field (deLeon, 1981;

Lasswell, 1970). Yet, the heritage of large, dissimilar, well-established disciplines like economics and political science has not blended, rapidly or smoothly, into a unified field.¹ As a tool for viewing where the academic field is today, bibliometric analysis can calibrate the disciplinary and field orientations of public policy journals. We previously reported (Adams, Infeld, Minnichelli, & Ruddell, 2014) widely divergent orientations between the *Journal of Policy Analysis and Management (JPAM)* and the *Policy Studies Journal (PSJ)*, with trends over two decades toward greater disciplinary segregation rather than interdisciplinary integration. In recent years, *JPAM* increasingly published researchers who referenced economic journals, while *PSJ*'s tilted more to political science journals. Whether other prominent public policy journals have particular disciplinary alignments is one of the questions that bibliographic analysis can answer.

The limited amount of prior research points to the same three basic research questions that one would ordinarily pose regarding network relationships among presumed clusters: interfield networks, intrafield networks, and network directions. More specifically:

1. Interfield networks: What discipline/field clusters of academic journals are most frequently found in the citation networks of researchers publishing in public policy journals?
2. Intrafield networks: How strong are citation networks among public policy journals? How do they compare to intrafield networks of economics and political science journals? And what are the comparative degrees of within-journal networks (i.e., self-citations)?
3. Network directions: To what extent are these intellectual networks characterized by reciprocation or by nonrecursive, unidirectional flows of research from disciplinary journals to public policy journals?

These questions will be addressed using bibliographic analysis with data drawn from *Journal Citation Reports*.

Methodology

Which leading public policy journals merit a bibliographic analysis? To cast a wide net, this study included seven general public policy journals tracked by Thomson Reuters' *Journal Citation Reports (JCR)*, also known by the outdated short-hand "ISI journals")²:

- *Journal of European Public Policy (JEPP)*
- *Journal of Policy Analysis and Management (JPAM)*
- *Journal of Public Policy (JPP)*
- *Policy Sciences (PS)*
- *Policy Studies (abbreviated as PS-UK)*

- *Policy Studies Journal (PSJ)*
- *Public Choice (PC)*

Their comparative rankings on JCR's "journal impact factor" vary somewhat from year to year. No journal was excluded based on its citation impact factor, and that somewhat controversial measure is not an element in our network analysis.³ However, it is interesting to note that in 2013, the last full year available, six of these seven journals were rated by JCR as widely cited. Based on their JCR impact factor, four (*PSJ*, *JPAM*, *PS*, *JEPP*) ranked in the top quartile of similar subject area journals in 2013 (*PSJ* and *JPAM* were the highest ranked, with *PS* and *JEPP* next). Two others (*PC* and *JPP*) were in the second quartile. Only *PS-UK*, fairly new to JCR, scored below average (fourth quartile). Overall, these journals are earning high marks in publishing research that scholars find worth citing.

Six of these seven monitored journals were grouped under the heading JCR calls "public administration." Some were repeated under the heading "political science," or, in the case of *JPAM*, "economics." *Public Choice*, found in both JCR's "economics" and "political science" lists, is *sui generis* with its distinctive theoretical underpinnings (also called "public choice"). While one might thus expect *PC* to be an outlier, that makes it an interesting addition to the list. Excluded journals were those focusing on a more specific policy niche, such as *Journal of Social Policy*, *Climate Policy*, *Journal of Accounting and Public Policy*, or on a single country, such as *Canadian Public Policy*.

A symposium issue on a particular topic might skew citations if only a single year were to be examined, so data were drawn from JCR for a 5-year period (2009–13) when available. Five journals could be tracked for this entire period, and two (*JPP* and *PS-UK*) were added to JCR in 2011. Our analysis employs percentages based on mean annual citations using all available JCR years. Later comparative and directional analysis with eight economics and political science journals draws on 2013 data, the latest available JCR year.

The nearly six hundred different JCR journals cited by these seven policy journals were sorted into one of 12 academic categories. Most journals fell easily into a bin. Journals that straddled two fields were coded with the noun, not the adjective; thus, *Political Psychology* was coded as psychology. Multidisciplinary journals that did not explicitly focus on public policy (e.g., *Journal of Common Market Studies*, *Social Sciences Quarterly*, *Europe-Asia Studies*) were assigned to the multidisciplinary/other category, along with journals that defied classification into any of the 11 other fields (e.g., *Scientometrics*, *Negotiation Journal*). Our bibliometric analysis was based entirely on reported citations of JCR journals,⁴ and excluded citations of newspapers, papers, reports, websites, and journals that had not attained JCR status.

Interfield Networks

Mean citation patterns over the years of study showed sharply different orientations among public policy journals (see Table 1). *Public Choice* and *Journal of Policy Analysis and Management* were strongly tied to economics journals (60 percent and

Table 1. Public Policy Journal Citations by Field

As a Percent of Total Citations to Other Journals	<i>Public Choice (PC)</i>	<i>Journal of Policy Analysis & Management (JPAM)</i>	<i>Policy Studies (PS-UK)</i>	<i>Policy Sciences (PS)</i>	<i>Journal of Public Policy (JPP)</i>	<i>Policy Studies Journal (PSJ)</i>	<i>Journal of European Public Policy (JEPP)</i>
Economics	59.5	52.8	11.6	9.3	7.9	6.6	5.4
Political science	25.7	4.2	19.0	14.2	37.7	35.3	46.2
Public admin	0.5	5.1	14.1	11.7	24.1	12.8	5.5
Public policy	0.5	2.5	10.2	11.3	10.6	11.6	4.8
Intrnl affairs/rel	2.8	0.4	1.8	1.2	2.9	1.9	11.1
Law	1.5	0.5	1.5	1.1	1.3	0.4	5.8
Education	0.0	3.8	1.0	0.5	0.0	1.8	0.3
Environment	0.1	1.8	3.0	12.9	1.3	4.1	1.1
Health + med	0.1	4.8	2.8	0.7	0.3	1.7	0.1
Psychology	0.9	3.7	1.0	1.6	0.3	3.3	0.8
Socio + soc wrk	1.3	5.2	6.0	4.8	3.2	6.1	2.5
Multidisciplinary and all others	7.0	15.1	27.9	30.9	10.5	14.4	16.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Mean citations as a percentage of all JCR journals across all available JCR years (minus self-citations). See endnote 4.

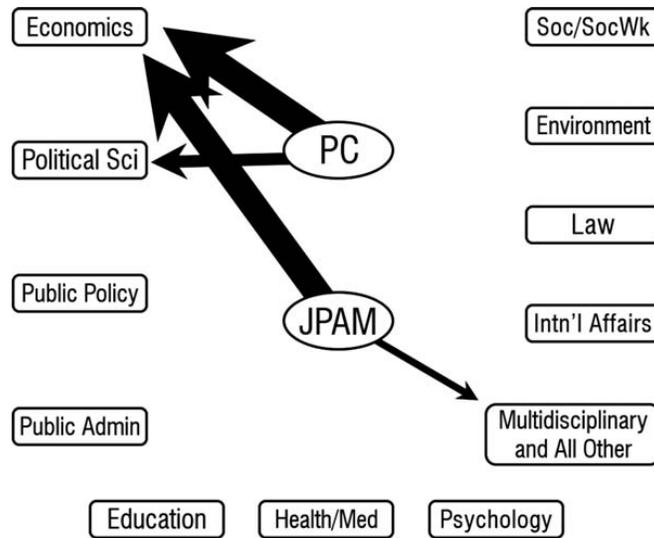


Figure 1. Interfield Networks of *Public Choice* and *Journal of Policy Analysis and Management* (Edges with Over 10% of Total Citations to All Other Journals).

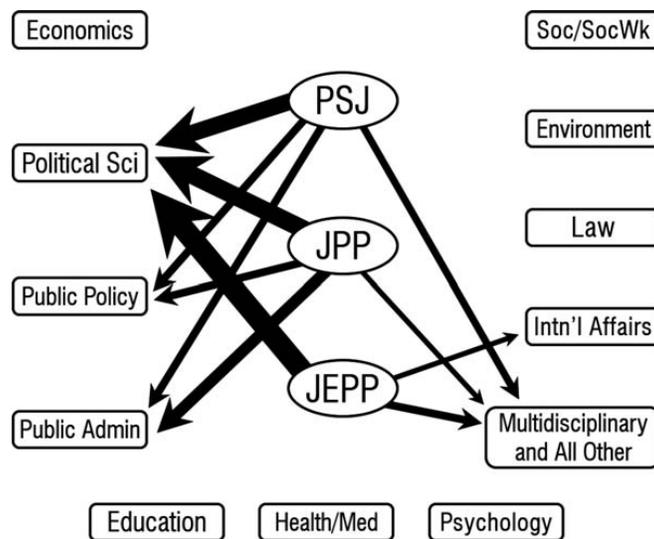


Figure 2. Interfield Networks of *Policy Studies Journal*, *Journal of Public Policy*, and *Journal of European Public Policy* (Edges with Over 10% of Total Citations to All Other Journals).

53 percent, respectively). Figure 1 illustrates the links (also known as *edges* in some network literature) between these two nodes (aka *vertices*). In both journals, a solid majority of the citations were to economics journals. No other public policy journals were so strongly aligned with a single field. However, beyond economics, *PC* articles drew on political science journals much more (26 percent) than did those in *JPAM* (4 percent).

Three journals drew heavily on political science (*Journal of Public Policy*: 38 percent; *Policy Studies Journal*: 35 percent; and *Journal of European Public Policy*: 46 percent), although not as heavily as *PC* and *JPAM* linked to economics. As diagrammed in Figure 2, *JPP* and *PSJ* also often drew on public administration

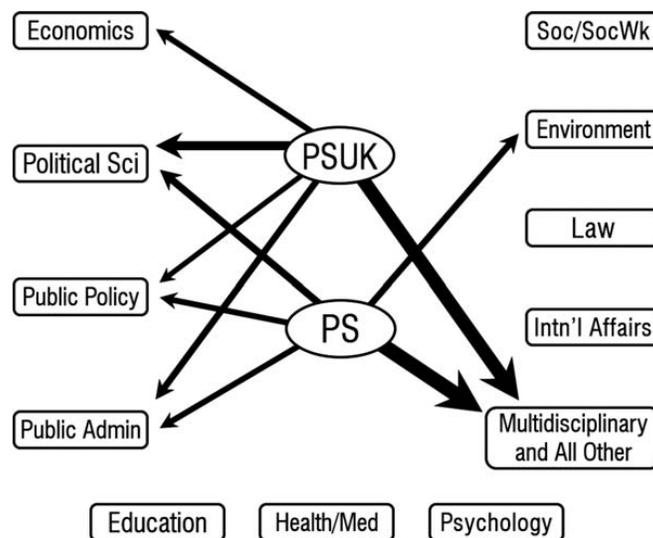


Figure 3. Interfield Networks of *Policy Studies (UK)* and *Policy Sciences* (Edges with Over 10% of Total Citations to All Other Journals).

(*JPP*: 24 percent and *PSJ*: 13 percent) and public policy journals (*JPP*: 11 percent and *PSJ*: 12 percent). At the same time, while noting these conspicuous leanings, one should also recognize the broad array of fields that constitute the balance of the citations.

As shown in Figure 3, the remaining two journals (*Policy Sciences* and *Policy Studies*) had similar citation footprints and were not especially attached to any particular traditional discipline. These were the most multidisciplinary⁵ of these seven public policy journals, often referencing journals across political science, public administration, public policy, and economics. Echoing this catholic approach, these journals were likely to cite (in about three out of ten citations) multidisciplinary and other journals that did not fit clearly under any major field umbrella (e.g., *Regional Studies*, *Rural Studies*, *Risk Analysis*, *Nanoparticle Research*).

A few journals had more idiosyncratic citation patterns during the period under study. Most notably, *Policy Sciences* drew more from environmental journals (13 percent), and *Journal of European Public Policy* drew more from international relations journals (11 percent) than did the other policy journals.

Table 2 lists the specific journals most often cited by these public policy journals and illustrates concretely the same network tendencies displayed in Table 1. A majority of the *JPAM* and *PC* citation priorities were to economics journals, while those in *JPP* and *JEPP* referred most to political science, not economics, journals. The top of the *PSJ* list was more varied, with a plurality to political science and the rest divided between public administration and public policy journals. Contributors to the two most multidisciplinary public policy journals (*PS-UK* and *PS*) referenced an especially varied assortment of journals; top citations included journals such as *Urban Studies*, *Journal of Common Market Studies*, *Journal of Rural Studies*, *Geoforum*, *Journal of Nanoparticle Research*, *Research Policy*, and *Risk Analysis*, along with some conventional public affairs journals.

Table 2. Journals Most Often Cited by Public Policy Journals (Excluding Self-Citations)

Economics-Oriented Policy Journals		Most Multidisciplinary Policy Journals	
<i>Journal of Policy Analysis & Management</i>	<i>Public Choice</i>	<i>Policy Sciences</i>	<i>Policy Studies</i>
<ul style="list-style-type: none"> • <i>Quarterly Journal of Economics</i> • <i>Journal of Public Economics</i> • <i>American Economics Review</i> • <i>Journal of Human Resources</i> • <i>Public Administration Review</i> • <i>Journal of Labor Economics</i> • <i>Review of Economics & Statistics</i> 	<ul style="list-style-type: none"> • <i>American Economics Review</i> • <i>Journal of Public Economics</i> • <i>American Political Science Review</i> • <i>Quarterly Journal of Political Science</i> • <i>Journal of Political Economy</i> • <i>European Journal of Political Research</i> 	<ul style="list-style-type: none"> • <i>Energy Policy</i> • <i>Research Policy</i> • <i>Academy of Management Journal</i> • <i>Journal of Public Policy</i> • <i>Policy Studies Journal</i> • <i>Public Administration</i> 	<ul style="list-style-type: none"> • <i>Regional Studies</i> • <i>Urban Studies</i> • <i>Environment & Planning A</i> • <i>Journal of Rural Studies</i> • <i>Public Administration</i> • <i>Public Administration Review</i> • <i>Geoforum</i>
Political Science-Oriented Policy Journals			
<ul style="list-style-type: none"> • <i>Journal of European Public Policy</i> • <i>Journal of Common Market Studies</i> • <i>European Union Politics</i> • <i>West European Politics</i> • <i>European Journal of Political Research</i> • <i>International Organization</i> • <i>Comparative Political Studies</i> • <i>American Political Science Review</i> 	<ul style="list-style-type: none"> • <i>American Journal of Political Science</i> • <i>Journal of Public Administration Research & Theory</i> • <i>Public Administration Review</i> • <i>Journal of Politics</i> • <i>European Journal of Political Research</i> • <i>British Journal of Political Science</i> 	<ul style="list-style-type: none"> • <i>American Political Science Review</i> • <i>American Journal of Political Science</i> • <i>Journal of Public Administration Research & Theory</i> • <i>Journal of Policy Analysis & Management</i> • <i>Journal of Politics</i> • <i>Public Administration Review</i> • <i>Policy Sciences</i> 	

Note: Bullets identify the economics journals often cited by the economics oriented journals and the political science journals often cited by the political science oriented journals.

These interfield networks document a good deal about the state of public policy research today. While they still draw on a diverse range of fields, five of the seven leading policy journals have a gravitational pull into the orbits of either economics or political science. Are these networks formal organizational ones, informal organizational links, or established interpersonal networks? *Policy Studies Journal* has a formal link with political science. Since 2004, the Public Policy Section of the American Political Science Association has cosponsored *PSJ* with the Policy Studies Organization. The other two political science tilting journals seemed to have unofficial links that suggest their audience. *Journal of European Public Policy* offered special subscriber rates for members of the American Political Science Association, European Consortium for Political Research, and European Union Studies Association. The website of the *Journal of Public Policy* had a single external link and it was to the Britain and Ireland Association for Political Thought.

Despite its strong bibliographic links to economics, the *Journal of Policy Analysis and Management* has operated under the auspices of the Association for Public Policy Analysis and Management, without a formal or informal link to a named economics association. Likewise, *Public Choice* has no formal disciplinary affiliation with a named economics organization, but it operates as a *de facto* journal of the Public Choice Society. Interestingly, the *Public Choice* website explicitly emphasized its goal of serving as a networking channel between disciplines:

The journal plays a central role in fostering exchange between economists and political scientists, enabling both communities to explain and learn from each other's perspectives. (www.springer.com/economics/public+finance/journal/11127)

As noted earlier, two journals (*PS-UK* and *PS*) evidenced particularly broad citation networks, including heavily citing other multidisciplinary journals, and had no notable alignment with any one traditional discipline. We will return to these interfield findings to discuss their implications in the last section of this paper.

Intrafield Networks

One striking pattern in Table 1 is that these public policy journals did not often reference other public policy journals. The economics pair *JPAM* and *PC* rarely did, while *JEPP* did slightly more (all under 5 percent). For the others (*PS-UK*, *JPP*, *PS*, *PSJ*), fellow public policy journals did not garner much more, typically constituting about one out of ten references.

Certain pairs of public policy journals might nevertheless be somewhat linked, with articles that often built on one another. However, as shown in Table 3, little appears to have changed since MacRae and Feller found only weak links between *JPAM* and *PSJ* in 1989–90. Of the recent 42 potential citation links between these journals (each of the journal's potential citations of the other 6 journals), only seven surpassed 2 percent of a journal's total mean annual citations of all journals (excluding

Table 3. Intrafield Networks of Public Policy Journals

Journals Cited	Citing Journal							
	Public Choice	Journal of Policy Analysis & Management	Policy Studies (UK)	Policy Sciences	Journal of Public Policy	Policy Studies Journal	Journal of European Public Policy	
Public Choice	—	0.2%	—	0.3%	1.3%	0.4%	0.4%	
Journal of Policy Analysis & Management	0.1%	—	—	2.1%	1.0%	2.7%	—	
Policy Studies (UK)	>0.05%	0.1%	—	0.1%	0.9%	2.8%	0.5%	
Policy Sciences	0.1%	—	0.9%	—	—	1.8%	2.4%	
Journal of Public Policy	>0.05%	0.9%	1.4%	1.7%	—	—	0.8%	
Policy Studies Journal	0.1%	0.9%	2.6%	4.0%	1.3%	1.8%	—	
Journal of European Public Policy	—	—	—	1.3%	4.5%	—	—	

Notes: Mean citations as a percentage of all JCR journals across all available JCR years (minus self-citations). See endnote 4. Empty cells in cases of no citations in *Journal Citation Reports* during the period under study.

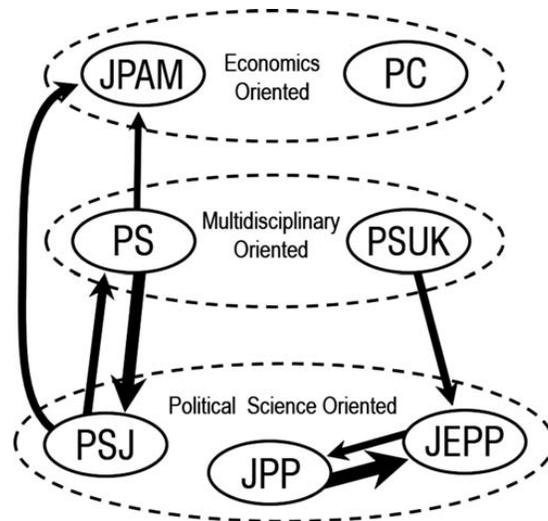


Figure 4. Intrafield Networks of Leading Public Policy Journals (Edges with Over 2% Citations of Total Citations to All Other Journals).

self-citations); just another eight were above 1 percent. Most fell below 1 percent including some journals that had no citations reported to one or more of the other six during the years under study.⁶

Figure 4 diagrams the seven relationships that were 2 percent or higher, sorting journals into clusters based on their interfield networks. One might expect that similar interfield networks would correlate with at least some closer intrafield connections. Surprisingly, intrafield networks bore little resemblance to the interfield networks. Articles in the economics-oriented pair, *PC* and *JPAM*, had little to say to one another that merited a citation. Likewise, articles in the most multidisciplinary pair, *PS* and *PS-UK*, while drawing from wide range of literature, seldom cited each other.

The pattern among the political science-prone journals was different. The strongest single link and the strongest reciprocal links were between *JPP* and *JEPP*, both political-science leaning Cambridge journals with highly international leadership teams. One of these was the strongest link found: *JPP* cited *JEPP* 4.5 percent of the time. Conversely, *JEPP* cited *JPP* 2.4 percent. These were also the only nontrivial links between journals clustering in the same interfield orientations (cf. Figures 2 and 4). The third political science-oriented journal, *PSJ*, had its strongest links not to *JPP* or *JEPP* (although they did receive citations), but to *PS* (2.8 percent) and *JPAM* (2.7 percent).

Despite the handful of stronger links, the overall median citations of these seven public policy journals to another one was only 0.8 percent of their total annual *JCR*-journal citations. Excluding the two more isolated, economics-oriented journals only increased the median to 1.3 percent. Among the political science-tilting trio, the median was 1.8 percent; for the more multidisciplinary pair, the median was 0.5 percent.

These links appear thin, but perhaps they are typical when pairing any two specific academic journals, given the many hundreds of candidate journals that are

Table 4. Intrafield Networks of Leading Political Science and Economics Journals

Journals Cited	Citing Journal			
	<i>American Journal of Political Science</i>	<i>American Political Science Review</i>	<i>Political Analysis</i>	<i>Journal of Politics</i>
<i>American Journal of Political Science</i>	—	8.3%	12.2%	15.7%
<i>American Political Science Review</i>	14.7%	—	12.2%	13.6%
<i>Political Analysis</i>	2.7%	2.1%	—	2.6%
<i>Journal of Politics</i>	7.1%	6.3%	6.7%	—
	<i>American Economic Review</i>	<i>Review of Economic Studies</i>	<i>Quarterly Journal of Economics</i>	<i>Economic Journal</i>
<i>American Economic Review</i>	—	13.4%	12.5%	17.7%
<i>Review of Economic Studies</i>	1.4%	—	2.6%	1.6%
<i>Quarterly Journal of Economics</i>	4.8%	3.3%	—	4.2%
<i>Economic Journal</i>	10.7%	6.4%	7.7%	—

Note: Citations as a percentage of all JCR journals cited in 2013 (minus self-citations).

potential sources. How do the seemingly weak connections among these public policy journals compare to those among journals in the other fields? Data assembled in Table 4 offer an answer from eight general political science and economics journals in 2013, the latest available JCR year. Among these political science journals, the median citations to one of the others constituted 7.7 percent of their total annual JCR-journal citations, far higher than among any four of the public policy journals. Among these economics journals, the median was 5.6 percent, again several times higher than typical links between public policy journals. These medians exceeded the highest single link between any two public policy journals (*JPP* citing *JEPP* 4.5 percent). This glimpse at these intrafield networks of these two parent disciplines suggests that scholars in leading political science and economics journals were building on each other's research considerably more than were those in leading public policy journals.

One additional channel of intrafield networking is the degree to which a journal successfully develops a substantive thread that launches, stimulates, and informs subsequent research. The suitable measure is journal "self-citations" (i.e., citations to other articles from the same journal), suggesting the extent to which scholars have a kind of periodic, conversational within-journal network. In this regard, public policy journals were similar to political science and economics journals. Articles in public policy journals may seldom have cited other policy journals, but they did often self-cite the publishing journal (Table 5). The median for self-citations in these policy journals was one out of eight (13 percent) citations (to JCR journals including self-citations). This matched the median self-citations in political science and economics journals. To be sure, journal self-citation rates varied somewhat within each field. In public policy, an outlier was the *Journal of European Public Policy*, which regularly features symposium issues with articles that often cross-cite other articles in the same issue. In the older disciplines, the flagship association journals (*American Political Science Review* and *American Economic Review*) were the most self-referential.

Table 5. Journal Self-Citations

Public Policy Journals		Political Science and Economics	
<i>Public Choice</i>	14.8%	<i>American Journal of Political Science</i>	13.6%
<i>Journal of Policy Analysis & Management</i>	8.9%	<i>American Political Science Review</i>	14.5%
<i>Policy Studies (UK)</i>	6.9%	<i>Political Analysis</i>	13.4%
<i>Policy Sciences</i>	13.7%	<i>Journal of Politics</i>	8.9%
<i>Journal of Public Policy</i>	6.1%		
<i>Journal of European Public Policy</i>	22.2%	<i>American Economic Review</i>	18.2%
<i>Policy Studies Journal</i>	13.1%	<i>Review of Economic Studies</i>	7.5%
		<i>Quarterly Journal of Economics</i>	11.6%
		<i>Economic Journal</i>	4.7%

Note: Mean self-citations as a percentage of all JCR journals across all available JCR years (2013-09 including self-citations) for public policy journals; and 2013 for political science and economics journals. See endnote 4.

Table 6. Interfield Directional Networks—Public Policy Journal Citations of Disciplinary Journals

Journals Cited	Citing Journal						
	<i>Public Choice</i>	<i>Journal of Policy Analysis & Management</i>	<i>Policy Studies (UK)</i>	<i>Policy Sciences</i>	<i>Journal of Public Policy</i>	<i>Policy Studies Journal</i>	<i>Journal of European Public Policy</i>
<i>American Journal of Political Science</i>	5.3%	2.4%			12.5%	5.9%	3.0%
<i>American Political Science Review</i>	5.7%	1.2%	0.6%	2.7%	8.0%	7.0%	3.7%
<i>Political Analysis</i>	0.5%	1.1%			1.3%	0.5%	0.2%
<i>Journal of Politics</i>	2.6%	0.6%		1.0%	4.2%	3.6%	1.7%
<i>American Economic Review</i>	6.5%	4.2%	0.6%		1.6%	0.5%	0.6%
<i>Economic Journal</i>	1.3%	1.2%			1.0%		0.2%
<i>Review of Economic Studies</i>	2.1%	0.6%			1.3%	0.2%	
<i>Quarterly Journal of Economics</i>	4.0%	7.9%		0.7%		0.8%	0.2%

Note: Citations as a percentage of all JCR journals cited in 2013 (minus self-citations). See endnote 4.

Network Directions

To what extent are intellectual networks largely a nonrecursive, unidirectional flow of research from disciplinary journals to public policy journals, consistent with Hanushek’s hypothesis, or is there a more reciprocal network exchange? Who is citing whom? As shown in Table 6, articles in policy journals oriented to economics (*PC* and *JPAM*), and political science (*JPP*, *PSJ*, *JEPP*) drew substantially on their legacy journals. Citations to these specific journals track with the patterns toward the larger disciplines noted earlier (Table 1 and Figures 1 and 2). In contrast, articles in the two more multidisciplinary journals (*PS-UK* and *PS*) seldom linked to these particular disciplinary journals.

The communication flow has been largely one way. The mostly empty cells in Table 7 reflect the absence of these policy journals from the reference lists of these

Table 7. Interfield Directional Networks—Disciplinary Journals’ Citations of Public Policy Journals

Rows: Journals Cited	Column: Citing Journal							
	<i>American Journal of Political Science</i>	<i>American Political Science Review</i>	<i>Political Analysis</i>	<i>Journal of Politics</i>	<i>American Economic Review</i>	<i>Economic Journal</i>	<i>Review of Economic Studies</i>	<i>Quarterly Journal of Economics</i>
<i>Public Choice</i>	2.3%	0.8%	1.2%	1.9%	0.4%	0.3%	0.9%	0.5%
<i>Journal of Policy Analysis & Management</i>			0.5%	0.2%	0.1%	0.1%		
<i>Policy Studies (UK)</i>								
<i>Policy Sciences</i>								
<i>Journal of Public Policy</i>		0.6%		0.3%				
<i>Journal of European Public Policy</i>	0.2%			0.1%				

Note: Citations as a percentage of all JCR journals cited in 2013 (minus self-citations).

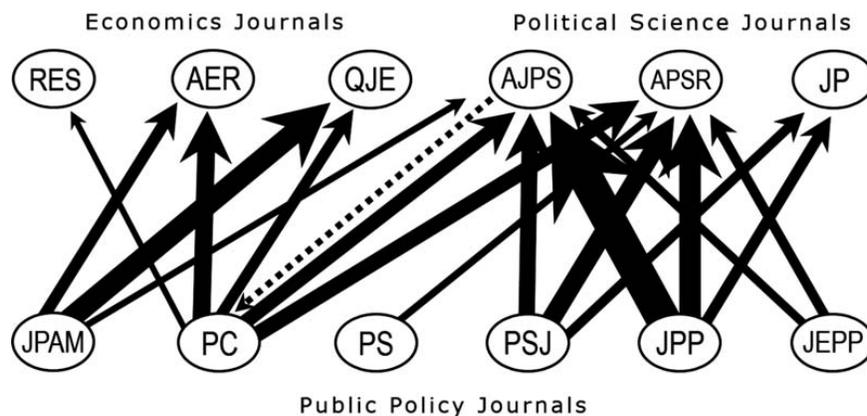


Figure 5. Directional Networks Among Public Policy, Economics, and Political Science Journals (Excludes Three Journals—*PS-UK*, *PA*, and *EJ*—without Any Edges Above 2% to Another Journal).

political science and economics journals. *Public Choice* was an exception, securing at least some attention across the board, but even its citations were usually a fraction of its own references to journals such as the *American Journal of Political Science (AJPS)*. As diagrammed in Figure 5, except for some *AJPS* citations back to *PC*, the citation flow was usually in one direction.

Conclusions and Implications

Articles published in these seven public policy journals have all been mediated by the essential gatekeeping role played by editors and boards, who have their own academic networks, standards for research rigor, perspectives on the field, and some degree of discretion about what appears in print. Individuals out of the mainstream of a journal’s traditional identity are probably unlikely to be chosen editor, but that

does not mean the selected editorial teams are passive bystanders. Early editors were candid about wanting their journals to proactively shape the new field.⁷ Recent editors are less likely to voice such ambitions explicitly, but they do sometimes signal what is sanctioned and welcome, as when the editor of highly quantitative *JPAM* announced a “willingness” to publish qualitative research.⁸ Acknowledging the key role of journals’ editorial teams confronting the challenge of many hundreds of tendered papers, those submissions and their editorial vetting were shown to have produced some noteworthy network relationships.

Interfield Networks

These policy journals exhibited three distinct bibliographic patterns toward other disciplines: Two (*PS* and *PS-UK*) were heterogeneous, often citing nonacademic reports (not counted in the data analysis here) along with a wide assortment of journals, especially multidisciplinary ones. Two (*JPAM* and *PC*) published authors who drew heavily on the literature of economics. Three (*JEPP*, *JPP*, *PSJ*) featured those more oriented to political science.

We previously documented the increasing alignment of *JPAM* with economics and *PSJ* with political science over the past three decades (Adams et al., 2014). Those orientations, it is now clear, are not unique to those two journals. Other policy journals also have a strong tilt to one of the two camps—*PC* to economics, and *JEPP* and *JPP* to political science. While two journals were considerably more multidisciplinary and interdisciplinary—*PS* and *PS-UK*—their articles seldom venture into economics. For better or worse, these bifurcations continue to defy expectations of a field that would be more than just a “mingling at the frontiers” of the two main heritage disciplines (Quade, 1970). Perhaps that aspiration was unrealistic, the gulf between the distinctive vocabularies and foci of these two formidable disciplines too wide to bridge.

At the same time, all these journals do exhibit extraordinarily wide-ranging citations. One should not emphasize their disciplinary tilt on the economics-political science divide and dismiss the diverse range of journals that constitute the balance of the citations. As summarized in Table 1, even articles in *JPAM*, despite its strong economics base, devote nearly half their citations to other fields. And studies in *PSJ* may give a plurality of their references to political science but nearly two-thirds draw on an eclectic assortment of fields (although not so often to economics).

Intrafield Networks

Articles in these public policy journals did not often build on findings from other policy journals (unlike practices of interfield citations in economics and political science). One can certainly argue that it would be healthier for the field if there were more “cross-pollination” between policy journals. At the same time, individual public policy journals did exhibit a substantial degree of self-citation, equaling the rates found in economics and political science journals. One might have expected high

self-citations in a unique journal like *Public Choice*, but the practice held true for most other policy journals as well. Public policy researchers are producing studies of special relevance to peers who publish in the same policy journal even if they are not often cited in other policy journals. One possible explanation is that many researchers successfully securing placement may have followed research threads and methodological approaches that seemed especially welcome in a specific policy journal and more likely to be viewed favorably by that journal's editors and reviewers.

Network Directions

The interfield networks between public policy, economics, and political science journals consisted of policy researchers often citing economics and political science journals, while seldom receiving reciprocal citations just as Hanushek predicted and MacRae and Feller found in the 1990s. *Public Choice* garnered some attention but it, too, had a sizeable imbalance in the flow of citations. This citation disparity might be the fate of applied policy journals operating from what is perhaps a structural disadvantage: public policy research tends to employ a varied and idiosyncratic dependent variables. The resulting articles may not be as broadly citable, even within public policy, as studies in disciplines where research more often targets the identical dependent variable (such as voter choice in political science or income in economics). Another possible explanation is that, as policy research has become more methodologically sophisticated over the years (Adams et al., 2014), public policy researchers are drawing from the latest innovations appearing in the methodological tool chests of the larger disciplines. Ultimately, the unidirectional citation flow may be a benefit: To the extent that mainstream economics and political science journals do not focus on applied public policy *per se*, leading policy journals have the advantage of less competition.

Overall, the bibliometrics reported here represent something of a paradox: relatively weak intrafield networks and seldom reciprocated interfield links to economics and political science journals, and yet most of these policy journals rank high in total citations and have been trending even higher. As noted earlier, six of the seven fare quite well on *JCR's* impact factor. Turning to a rival measure, the SCImago Journal Rank (SJR) indicator based on the Scopus dataset (Guerrero-Bote & Moya-Anegón, 2012) shows six of the seven journals ranking in the top quartile among relevant journals and generally trending upward over time. For example, SJR shows *Policy Studies Journal* progressing steadily from the third quartile in 2001–04, to the second quartile during 2005–07, up to the top quartile since 2008.

Without stronger networks, how can most of these public policy journals be ranked so high? Their rankings were achieved because references to their policy articles appear in so many journals across so many diverse fields that they cumulatively vault these policy journals into the top tiers. The policy journals examined here have become citation-worthy resources for scholars publishing in a remarkably wide range of other prominent journals not confined to economics and political science. Among hundreds of citing journals, that variety can be illustrated by noting

examples such as the *American Journal of Sociology*, *Social Science Quarterly*, *Journal of Conflict Resolution*, *American Journal of Public Health*, *Demography*, *Journal of Legal Studies*, *International Organization*, *Journal of Higher Education*, and *Public Administration Review*. Perhaps this is ultimately a most appropriate and valuable role for public policy journals—not only to advance the field but to provide high-quality, applied research that informs researchers across a broad array of policy-relevant areas.

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Notes

1. Regarding the clashes of warring disciplines, see Raymond Vernon’s (1985) candid essay upon his retirement as the first editor of the *Journal of Policy Analysis and Management*.
2. The Institute for Scientific Information (ISI), founded by Eugene Garfield in 1960, began extensive citation indices (e.g., Social Sciences Citation Index). In 1992, ISI was acquired by the Thomson Corporation (renaming the division Thomson ISI) which later acquired the Reuters Group in 2008 and became Thomson Reuters, the enormous multimedia news and information company. Thomson Reuters stopped using the old ISI moniker and issued its *Journal Citation Reports* under its Web of Science umbrella. Nonetheless, some academics still use the erstwhile phrase “ISI journals” to refer to respected, peer-reviewed journals that meet standards sufficient to be included in the citation index. Standards for selecting the more than 12,000 journals covered by *Journal Citation Reports* are surprisingly subjective. An “expert” editor makes a judgment call “to determine the journal’s overall strengths and weaknesses” using “many factors” (weighting undisclosed) both “qualitative and quantitative” (Garfield, 1990). A premium is put on peer-reviewed journals that are published in English (“the international language of science”), have international diversity in participation among contributors and members of the board, follow certain publishing standards, and score relatively high in citations from peer journals. Also, the process somehow strives to include some “excellent regional journals” that may not rank so high in worldwide citations or international diversity (wokinfo.com/essays/journal-selection-process). Despite this nonreplicable screening, the resulting list of qualifying JCR journals in public policy, public administration, and political science is broad and includes the journals that appear in reputational surveys of academics in these fields (Bernick & Krueger, 2010; Giles & Garand, 2007).
3. “The annual JCR impact factor is a ratio between citations and recent citable items published” (<http://wokinfo.com/essays/impact-factor/>). The calculation of JCR’s impact factor and ways that it can be

manipulated are controversial (Falagas & Alexiou, 2008; Pendlebury & Adams, 2012; Rossner, Van Epps, & Hill, 2007; Vanclay, 2012). Impact factors are not used in the network relationships reported in this paper.

4. One oddity in *Journal Citation Reports* is that its citation summaries do not bother to identify those journals, even if it is a *JCR* journal, that were only cited once during the year. In other words, if throughout 2013 *Public Choice* received just one citation in *Policy Sciences*, *Public Choice* would not be credited with that lone citation in that particular journal. These omissions create a small degree of imprecision in all bibliographic studies, but are effectively “rounding error” in our tables rounded to tenths of a percent of annual citations. In late 2014, just after the conclusion of most data retrieval for this study, *JCR* thoroughly restructured its website and its data presentation formats, although its practice of not identifying solitary citations continued.
5. Some analysts distinguish between “interdisciplinary” research that integrates disciplines and a “multidisciplinary” collection of individual studies that reflect various disciplines even if authentic interdisciplinary studies are also included in the collection (Jacobs & Frickel, 2009). Multidisciplinary is thus a less strict term for the amalgamations that appear in many journals that cross disciplinary boundaries.
6. See endnote 4.
7. Raymond Vernon (1985) wrote that the “main function” of the *Journal of Policy Analysis and Management*, was to “speed the day” when public policy would be a “recognized professional field.” Stuart Nagel wanted *Policy Studies Journal* to “help give some shape to the developing area of policy studies” (Nagel, 1973). Brewer wanted *Policy Sciences* to help “structure a discipline” (Brewer, 1974, p. 239).
8. “Qualitative and mixed methods have not been well-represented in *JPAM*, an omission we hope that this symposium will begin to correct. . . . The announcement of this symposium was intended to signal a willingness on the part of the editor to publish such studies. . . .” (Pirog, 2014).

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