Finding Common Ground: Innovation and Diffusion across Political Science and Public Management Research

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t is quite an honor to be selected for this John Gaus Award Lecture by a committee of my peers. I want to thank my husband, Bill Berry—my partner for 48 years and sometimes coauthor—and certainly my children, Katie Berry and David Berry, who have diverted my attention from policy studies for 35 years now and made life much more enjoyable by their personalities. I especially want to thank my many coauthors who have kept research and writing an engaging endeavor while we have developed friendships that will last a lifetime.

As a young scholar doing doctoral studies in political science at the University of Minnesota in the late 1970s, my fields of study were public policy, comparative politics, and public administration. Policy studies was new enough that when I took my doctoral written exams in 1978, one of the questions I answered was: "Is policy studies well defined enough to be a field of its own, or is it just a subfield of American politics?" Well, you can probably guess what my answer was. My major professor was Virginia Grey (1973), so I had the advantage of getting into innovation and diffusion (IAD) studies early as it began to be absorbed into political science studies. My dissertation topic, completed in 1988, was on tax innovation and diffusion in the American states. This article focuses on describing and comparing political science policy studies and public management studies that have addressed IAD research. My work has straddled both fields, and this John Gaus Award Lecture has given me the opportunity to explore these similarities and differences.

EVOLUTION OF POLICY INNOVATION AND DIFFUSION STUDIES

The literature on policy IAD is vast and expanding rapidly. A recent count on Google Scholar found 497 studies labeled "policy innovation and diffusion studies on government programs." IAD policy studies have addressed a wide range of policy areas, including living wills, medical marijuana, Native American gaming treaties, abortion restrictions, lotteries, anti-smoking policies, and morality policies (e.g., nondiscrimination of sexual orientation). An extensive range of management topics and implementation approaches, including e-government, pay for

performance, new public management, technology acceptance, and collaborative governance, also have been addressed. IAD studies help us to understand decision making and motives for adopting new practices. IAD studies also include parties external to government insiders in the study of innovations, demonstrating how public opinion, media coverage, special-interest groups, and policy entrepreneurs can yield enormous influence under the right conditions.

DEFINITIONS AND EARLY POLITICAL SCIENCE WORK

I first offer some basic definitions. Innovations generally are studied as new to the unit adopting or revising the innovation, although increasingly more studies examine the substance of the innovation and how it evolves over time through reinvention or by developing more coverage. Everett Rogers is considered the father of innovation studies. In his book, *Diffusion of Innovations*—which went through five editions from 1962 to 2003—he summarized and analyzed all of the IAD studies across many fields. Policy and management innovation studies did not appear until the fourth edition of his book in the 1990s. Rogers (2003, 5) defined diffusion as "a process in which an innovation is communicated through certain channels over time among the members of a social system." Policy diffusion is "the process in which the decisions of earlier policy adopters influence those of later adopters" (Shipan and Volden, 2021, 11).

POLITICAL SCIENCE INNOVATION AND DIFFUSION STUDIES

Most literature reviews on IAD policy and political science studies begin with Walker's (1969) study on how policy innovations diffuse across the American states, which shows regional groupings of states and national communication patterns across states based on national professional associations. Walker's article is the eighth most-cited article in *American Political Science Review*—it truly was a foundation for a vast field of study.¹

It has been very gratifying to see that the Event History Analysis (EHA) approach to studying policy IAD that Bill and I introduced in our 1990 lottery research was adopted by many other scholars in the following years (Berry and Berry 1990, 2018). In the past three decades, students of IAD studies in both political science and public management—as well as across disciplines in education, sociology, and health policy, to name a few—have used the approach to study adoptions of a wide range of policies. Other scholars have modified the EHA technique by taking advantage of

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advances in the methodological literature. My view is that the approach that Bill and I used in the lottery study allowed us and other scholars to do a good job of answering these two questions:

- (1) What internal characteristics of states make them more or less likely to adopt a specific policy?
- (2) Do policies diffuse across states—with a focus on states being influenced by their neighbors?

Jing He, a doctoral student in the Askew School, produced a word cloud or map based on the political science studies listed in 150 political science studies from 1990 to 2018. Two of the primary mechanisms of innovation are present in figure 1: competition and learning, However, we do not see the other mechanisms—mandates and imitation—listed, which indicates that learning and competition have received far more attention as ways to understand policy makers' motivations and decision processes. We also

IAD studies help us to understand decision making and motives for adopting new practices. IAD studies also include parties external to government insiders in the study of innovations, demonstrating how public opinion, media coverage, special-interest groups, and policy entrepreneurs can yield enormous influence under the right conditions.

There has been substantial evidence that states do become more likely to adopt many different policies after their neighbors adopt those policies first. However, there are many important questions that the approach we proposed in 1990 could not answer. For example, we realized that states could emulate their neighbors' adoptions of a lottery for two very different reasons: they could learn from other states, or they could adopt for competitive reasons to prevent neighboring states with lotteries from stealing their revenue. Although we realized this, we had no way to determine which of these mechanisms was in play. The remainder of this article focuses on more recent research by other scholars in political science and public management who have asked questions at least as interesting—and, in some cases, more interesting than the two we tried to answer in 1990. I begin with political science work. found the types of policies that are studied by political scientists: economic, welfare, education, energy, social, regulation, health care, morality, abortion, and finance. Other words refer to change: dynamic, reform, choice, adoption, spread, and response. Nothing here is surprising, but the figure also shows the dominance of American state studies because global and international studies do not appear in the policy word cloud. There are global studies to be sure but, by 2018, they were not yet in very great numbers in political science.

FOUR QUESTIONS FOR IAD SCHOLARS TO ADDRESS

I present four new questions that political science IAD scholars have begun to study in recent decades. Although many more new questions have been studied, I think these four are particularly interesting and worthy of continued exploration in the coming



years. The first question moves away from the relatively simple question, "Do policies diffuse across states?," to the very complex question, "By what mechanism do policies diffuse?" Several recent studies have allowed us to not only find whether diffusion is occurring but also to understand its mechanisms-or why policy makers decide to adopt a policy. Shipan and Volden (2008) focused on four mechanisms: states learning from one another; states competing with one another; states imitating one another (i.e., copying other states without considering whether the policy was successful in the other states); and one government coercing another to adopt. Typically, coercion is a form of vertical diffusion in which a higher level of government is seeking to convince a lower level of government to adopt a policy. Berry and Berry (2018) added normative pressure to these four mechanisms in which shared norms and conceptions of "best practices" (often due to professionalization) lead governments to be receptive to the same policies. Yi, Berry, and Chen (2018) developed a sixth diffusion mechanism in management called the Agent Network Diffusion Model, which identified the importance of microlevel individual agents who carry innovation knowledge as they move between cities or agencies.

Indeed, Berry and Baybeck (2005) followed up on the Berry and Berry (1990) lottery study by trying to determine whether the diffusion of the lottery across neighboring American states that we detected in 1990 was due to learning or to competition. Berry and Baybeck estimated an EHA model that includes as independent variables both the number of previously adopting neighboring states and a measure of a state's degree of concern that its residents will play other states' lotteries. Their results show that state lottery adoption is more influenced by competition—that is, avoiding losing revenues to nearby states—than by policy learning.

Another answer to the question of by what mechanism do policies diffuse is to examine policy entrepreneurs who move policies onto the agenda and through the adoption and implementation processes. Mintrom (1997, 1998) and Mintrom and Vergari (1996, 1998) introduced policy entrepreneurs to the political science literature and, using mixed methods, demonstrated their impact in multiple stages of the policy process.

A second interesting question modifies the first: "Does the mechanism by which policies diffuse depend on the context?" Shipan and Volden's 2008 study of US local governments' adoptions of anti-smoking policies explicitly tested for the presence of each of the four mechanisms of diffusion. The authors relied on EHA and included independent variables chosen to identify whether (1) a local government *learns* from other cities in a state; (2) a city *competes* based on a fear that its smoking residents will abandon local businesses and patronize those in nearby cities without smoking restrictions; (3) a city imitates larger cities; and (4) a city is *coerced* by its state to adopt anti-smoking policies *or* is preempted by state laws and prohibited from adopting them. However, Shipan and Volden's (2008) most interesting hypotheses predicted that the size of a city (i.e., its population) influences the *mechanism* by which a policy diffuses: they hypothesized that larger cities are more likely to learn from other cities and less likely to engage in competition and imitation and to be coerced by their state government to adopt.

A third question that has prompted recent work is: "How do the attributes of innovations affect their diffusion?" The word "attribute" in this question dates back to Rogers' classic book, *Diffusion of Innovations* (2003). He identified five attributes of

innovation across all types of programs, policies, and practices: compatibility, complexity, observability, relative advantage, and trialability. Given this set of attributes, an important question is: "Are diffusion patterns conditional on the specific types of policy attribute?" Makse and Volden's 2011 study of 27 criminal-justice policies provided an answer. They showed that higher levels of two attributes—relative advantage and observability—are associated with a greater likelihood of adoption whereas a higher level of complexity is associated with a lower likelihood. Other studies across disciplines generally found that complexity is the one attribute that reduces the likelihood of a policy or a practice diffusing across the population at risk of adopting.

A fourth question shifts attention from the binary dependent variable used in most IAD research—that is, whether or not a jurisdiction adopts a policy—to a different dependent variable: "What determines how the content of a policy changes over time?" More-recent studies have used an interval-level variable measuring the substantive content of a policy. For example, in a paper I coauthored with Kim and Huang (2021), we studied how the strictness of medical marijuana laws over time changes in the US states that made medical marijuana legal. We found that most states expanded and made their eligibility laws and regulations less strict. A major factor responsible for the policy change was the presence of veterans who returned from military duty with trauma and PTSD.

RESEARCH METHODS USED IN POLICY IAD

The Berry and Berry (1990) lottery-adoption paper introduced EHA to IAD studies, which allowed us to combine internal and external factors in one model using the dependent variable whether or not the jurisdiction adopts the policy in a specific year. Berry and Berry (1992, 1994b) extended EHA analysis to tax innovation in the states. Another study I authored (Berry 1994a) provided cautionary advice on the limits of multiple regression to give accurate results for innovation studies. At least nine newer methods have been used with IAD studies that enable researchers to delve into research questions beyond adopt or not adopt. These methods and an example of each include directed-dyad EHA (Volden 2006); network analysis (Demarais, Harden, and Boehmke 2015); geographic information systems and spatial analysis (Berry and Baybeck 2005); game theory and Bayesian learning (Gilardi 2010); Spatial Autoregressive Models with Temporal Lags (Yi, Berry, and Chen 2018); text analysis, bibliographic analysis, and mixed methods (Kim 2016); and qualitative research represented by cross-case analysis and within-case process tracing (Starke 2013). These diverse research methods allowed many more questions to be answered and studied than under EHA.

TYPES OF POLICIES AND DIFFUSION

Mallinson (2021, 382) found different determinants across the types of policies. "Regulatory policies seem to be mainly impacted by internal state factors such as party control of government and citizen liberalism." Morality policy, in contrast, is heavily impacted by influences of contiguous neighbors and ideologically similar states. Mooney and Lee (1995, 2000) found that real conflict over the clash of different values makes internal factors to the state decisive as to whether these morality policies will be adopted by the state. Haider-Markel (2001) found that states with Democratic legislatures and higher percentages of college graduates are more tolerant toward gay rights legislation.

Table 1 Common Determinants of Policy Innovation and Policy Diffusion

Political Elements	Economic Elements	Social Elements	Geographical Elements	Policy Nature	Demographic Characteristics
Election Year/ Proximity of Election/ Election Cycle (Berry and Berry 1990, 1992)	Financial (Expenditure, Revenue, and Fiscal Health), (Berry and Berry 1990; Karch and Cravens 2014; Berry and Berry 1992)	Religious (Berry and Berry 1990)	States Nearby (Berry and Berry 1990, 1992; Pacheco 2012; Shipan and Volden 2008)	Success Policy (Volden 2006)	Population Ratio (Volden 2006)
Party Control (Berry and Berry 1990, 1992; Volden 2006; Pacheco 2012)	Personal Income (Berry and Berry 1990)	History (e.g., Tobacco- Producing States) (Pacheco 2012)	Similar States (Volden 2006)	Learning from Success (Simmons and Elkins 2004)	Elderly People (Biggers and Hanmer 2015)
Government Ideology (Volden 2006; Pacheco 2012)	Per Capita Income (Volden 2006)	Public Opinion (Pacheco 2012)	Near Big Cities or Not (Shipan and Volden 2008)	Similar Policies Before (Shipan and Volden 2008)	Minority Diversity (Desmariais, Harden, and Boehunke 2015)
Political Interests (Biggers and Hanmer 2015)	Urbanization (Berry and Berry 1992; Biggers and Hanmer 2015)	Gender, Race, Education (Pacheco 2012)	Policies of Border Countries (Simmons and Elkins 2004)		Globalization (Simmons and Elkins 2004)
External Political Pressure (Simmons and Elkins 2004)	Economic Conditions (Simmons and Elkins 2004)	Communication Networks (Simmons and Elkins 2004); Availability of Broadband			
	Competition (Simmons and Elkins 2004)				

DEPENDENT VARIABLE

Another important development in policy IAD is the evolution of the dependent variable. The adopt or not to adopt variable has been criticized as not revealing enough about the content of the policy or its change over time. More studies have used an intervallevel variable defining the comprehensiveness or content of a policy area (e.g., Garrett and Jansa 2015; Volden 2006; Kim, Huang and Berry, 2021). Other studies used policy outcomes as the dependent variable to assess the impact of innovation adoptions in new jurisdictions (e.g., Nicholson-Crotty and Carley 2016; Yi, Berry, and Chen 2018).

DIFFUSION DETERMINANTS

Policy IAD studies have covered so much ground that it would be unrealistic to try to address all of the approaches or findings. In a coauthored study (He and Berry 2022), we summarized the common determinants of policy IAD research and found that the factors listed in table 1 have been used widely as independent or control variables in policy IAD studies.

Examining the outcome and success of a policy rather than only adoption is a positive step toward our understanding of how policy makers learn, imitate, or compete. For example, Volden (2006) added the "success policy" index to the traditional EHA model in his study of the federal Children's Health Insurance Program policy diffusion, and other scholars have used the variables "success in meeting policy objectives."

Independent variables to measure diffusion have moved from geographic neighbors to include citizen and government ideology, public opinion, availability of broadband, and perceived similarity of states by the public. This broader set of diffusion variables helped us to understand the pressures for and obstacles to diffusion of policies even as ideology, partisanship, and communications availability have grown in dominance in recent years. Our knowledge about the importance of ideology as cue taking and how policies are interpreted through the lens of ideology has increased enormously. In a study that focused on exploring the impact of ideology on local council members' views of innovation using an experimental design, Butler et al. (2017) found that ideology does matter and makes elected officials more or less receptive to innovation diffusion. "Policy makers who are ideologically predisposed against the described policy are relatively unwilling to learn from others, but such ideological biases can be overcome with an emphasis on the policy's success or its adoption by co-partisans in other communities" (Butler et al. 2017, 37).

Studies at all levels generally find that the more neighboring jurisdictions that adopt, the higher the probability for adoption by the remaining nonadopters. This has been true for US cities, counties, and states; provinces in China; local governments in South Korea and in Brazil; countries in Latin America; and other governmental jurisdictions in Europe and Asia. We should expect that geographic closeness will decrease as a determinant as the Web, international and professional associations, and communication technology continue to expand. Especially for competition and imitation purposes, however, geography continues to hold attention and urgency for policy makers. Mallinson's metaanalysis found "evidence of generally positive effects of initiative availability in states that result in enacting innovative policies, government liberalism, multilevel governance, and negative effects of ideological distance, Republican control of government and divided government" (Mallinson 2021).

To summarize, I recount nine key findings from political science studies on determinants of IAD. First, citizen and

Figure 2 Word Cloud Based on Public Management IAD Studies



government ideologies can both promote and obstruct diffusion. Second, partisan ideology can affect whether learning or imitation occurs. Third, multilevel governance and federalism often lead to more innovation. Fourth, there are different impacts on policy diffusion based on whether the policy is successful. Fifth, the more neighboring jurisdictions with the same policy, the higher the probability that a jurisdiction will adopt the policy (found in states, cities, countries, and regions). Sixth, there are differences in the types of diffusion patterns found regarding policieswhether horizontal, vertical, or diagonal-and the impacts of diffusion patterns on adoption of policies differ. Seventh, regulatory policies are heavily impacted by internal state factors such as party control of government and citizen liberalism. Eighth, morality policies, in contrast, are heavily impacted by influences of contiguous neighbors and ideologically similar states. Ninth, the availability of citizen initiative for ballot issues generally has a positive effect on the adoption of popular policies, as demonstrated by the spread of medical marijuana laws. Eight of the first 10 states to adopt these laws had citizen initiatives.

PUBLIC MANAGEMENT IAD STUDIES

This section summarizes research and findings from public management IAD studies. In my opinion, public manager scholars have done a more thorough job incorporating policy-study citations and ideas in their work than vice versa. This can be attributed partly to the fact that public management IAD studies are more recent than public policy IAD studies. However, in general, I think public management scholarship builds on work and theory from the policy research studies and has incorporated many topics related to agencies, management, and governance that are not frequently found in policy IAD studies.

Jing He (2022) created the word cloud of IAD public management studies based on 90 public management articles between 1998 and 2020 shown in figure 2. There are many similarities in the word clouds for policy and management IAD studies: adoption, learning, federalism, theory, health, and economic. There also are differences—the organizational studies add more variables including different types of innovations such as service, process, product and innovations, roles of knowledge, leadership, technology, collaborative, organizational, international, and strategic management. IAD studies in public management have been international for decades, broadening from governance and network studies to embrace the role of managers and innovative organizations, how they contribute to innovations and performance, and which factors lead to innovative organizations.

IAD Studies in Organizational Theory and Public Management

Organizational innovation studies from the 1970s and 1980s were conducted mainly by business-school scholars. In public management, organizational innovation and effectiveness studies emerged in the 1990s. Keith Provan and Brint Milward were early leaders in these studies, as well as Eric Hans Klijn, Richard Walker, and Stephen Osborne. Organizational innovation studies often originated from local government data, network studies, e-government, and public-service delivery and implementation research. As collaboration and governance theory and questions became more widely studied, scholars considered not only what makes an organization innovative but also whether innovativeness increase its effectiveness and its outreach to citizens and potential partners.

These studies on the relationships between organizational determinants and innovativeness can be summarized with the help of several systematic reviews, such as the 2016 reviews by Hanna De Vries, Victor Bekkers, and Lars Tummers and several papers by Richard Walker (2006, 2008). The following factors are positively associated with organizational innovation: (1) employee specialization and professionalization; (2) interaction of agency bureaus or with outside partners; (3) flexible work structures and practices; (4) decentralized decision making; (5) managers who promote innovation and open cultures; (6) slack resources for pilot

projects and strategic investments; and (7) increased communication and attention to performance management.

IAD Studies and Strategic Management

Another field of public management that supports policy and management innovation is strategic management, which focuses on leadership, outreach and communication processes, and decision-making processes that create public value for citizens. In Moore's classic book, Creating Public Value, he argued that managers who operate from a strategic management perspective first and foremost create public value (Moore 1995). An example of application is a paper that I coauthored with Kwon and Jang (2013) that developed a framework to predict the determinants of cities that are comprehensively using strategic planning and strategy. We found support for five theoretical factors in our model: (1) the structure of council-manager cities; (2) heterogeneous population (which other studies have noted increases the complexity of the external environment to which cities need to respond); (3) having risk-taking leadership; (4) depending less heavily on sales-tax revenue; and (5) having staff members who participate in professional networks.

One highly relevant line of work asks which type of strategy is most used and/or most effective for public managers. Meier et al. (2007, 2010) developed the Miles and Snow private-sector typology, which posits that organizations will adapt a strategy that maximizes their management success, defined as prospector, analyzer, and defender. Their work demonstrated that context matters and that findings are conditional. In a 2010 study, they found that incrementalism and an absence of strategy are associated with lower levels of organizational performance Meier et al. (2010). They also found solid statistical support for the positive impact of the prospecting strategy (i.e., embracing change with innovation) on organizational performance and the negative impact of the reactor strategy on organizational performance. Meier et al. (2007) found consistent positive relationships for using the prospecting strategy with higher performance in local British governments. These studies have shown clear evidence that prospector strategy-related to innovation and change in agencies-is associated with positive agency performance using key agency performance outcome measures in large-N studies. Bryson, Yang, and Berry (2011) asserted that strategic management is a practice that should be studied as a complex practice that involves partially routinized strategic thinking that humans apply with sense making and dialogue.

WHY DO MANAGERS INNOVATE?

Some of the best evidence comes from Borin's two books— Innovating with Integrity: How Local Heroes Are Transforming American Government (1998) and The Persistence of Innovation in Government (2014)—that summarized information about awardwinning programs from the Harvard Kennedy School Innovations Awards. We might expect that applicants to the award-winning innovation program come through legislative or gubernatorial policy action. In a largely top-down, risk-averse governmental bureaucracy, frontline public servants and middle managers would not be expected to be innovators. However, this is not the case. Of the almost 350 innovations coded, 46% were initiatives by middle managers or frontline staff, whereas the agency head represented about 37%. Legislators and governors combined comprised the third-largest category representing about 30% of the innovations. Borins also found that about 27% of the innovations identified program clients or collaborators (e.g., nonprofit organizations) as initiators in 2010. Finally, new leadership from either outside of or inside the innovating organization was rarely associated with innovation. Borins (2014, 2018) also found that responding to problems was much more common than responding to a crisis. Only 11% of the innovations involved responding to a crisis situation, whereas 58% were solving problems not related to a crisis.

Organizational Innovation and Types of Innovation Processes

In one of the few public management studies that assesses whether organizational innovation is driven by competition, learning, public opinion, or mandates, Walker, Avellaneda, and Berry's (2011) used the infamous British local government database. They found that five of the seven driving mechanisms of innovation diffusion are positive and statistically significant, covering each of the four areas in the Berry and Berry (1990) policy innovation framework. Specifically, the findings demonstrated that the greater the provider competition, association with professional associations, vertical influence, external pressure, and responsiveness to user demands, the more that diffusion of innovation is promoted.

Innovation and Collaborative Governance

Public management has seen an increase in scholarship on collaborative governance, including whether and how different types of partnerships lead to innovation and other outcomes (e.g., Emerson, Nabatchi, and Balogh 2012; Sørensen and Torfing 2011; Emerson and Nabatchi, 2015). Scholars Hartley, Torfing, and Sørensen (e.g., 2013) wrote extensively on new governance network theories developed in response to the growing complexity of modern society. They asserted that public innovation can be enhanced through collaboration as well as competition (Kickert et al. 1997). Innovation in a traditional hierarchical agency is different than innovation in a network. Part of this is due to the role of new technology and social media. However, it also is true that the roles of managers are different in hierarchical agencies versus those required in networks and in different types of networks. Milward and Provan (1995) discussed the roles as managing the network's legitimacy, conflict among the members, the design of the governance structure, and the commitment of members from buy-in to securing and distributing resources. These roles considerably surpass planning, organizing, staffing, directing, coordinating, reporting, and budgeting, and they underscore the facilitation and strategic management activities involved in leading networked programs.

Another highly read classic is Bryson, Crosby, and Stone's (2006) study on how to promote and deepen cross-sector collaboration in the public sector, which recognized that we live in a shared-power world and that to innovate to solve "wicked" problems, it takes more than a government agency or a single program to make a difference.

Innovation and Institutionalization

Research has surpassed innovation adoption to examining barriers and promotions of innovation implementation and institutionalization. "In public organizations, one-off or stand-alone innovations are not the norm" (Walker 2008). Innovations typically are a highly strategic activity; innovation often is a continuous activity, in which more significant processes of change are implemented to find new ways of achieving strategic objectives. Governmental intervention and structured innovation programs such as those that many European countries have adopted are recent answers to this. One study found innovation labs in 25 countries (Tonurist, Rainer, and Lember 2015). Such endeavors leave little room for innovation "by chance"; rather, innovation is becoming a programmed activity. We must understand the constitutive elements if we want to understand the dynamics of the innovation process.

COMPARATIVE SUMMARY

As other scholars have argued, "innovation" is one of those "magic" words that usually has a positive connotation. It cannot be denied that many innovations fail or are never implemented fully or in an ongoing manner. Much of this reality is suppressed or—as Mallinson (2021) and others have argued—it may reflect a case of the paper going in the file drawer in the belief that journals would not publish failed innovation studies. This may be true, but we are working from what is available. modification of the three strikes laws. Modifications have been more impacted by financial necessity due to the high cost of corrections and shifting public opinion toward liberalizing prison sentences.

Successful policy IAD in the age of technology likely will move well beyond geographical barriers. The impacts of the Internet, social media, artificial intelligence, and e-governance on knowledge and information diffusion are enormous. Frankly, there are now sufficient IAD studies related to these topics that this article could simply be a critical review of the topics and findings of public management and technology innovations. Tolbert et al. (2008) found that "the link between reinvention and e-government raises the possibility that the modernization of state institutions generally facilitates innovation," which to me is an optimistic prospect. Lee, Chang, and Berry (2011) used a crosscountry, global model to test the development and diffusion of e-government and e-democracy. We found evidence that factors related to competition, learning, and normative pressures all contribute to the diffusion of e-government across countries. In addition, numerous scholars have found that social media use is

["i]nnovation" is one of those "magic" words that usually has a positive connotation.

Initially, public management studies used many of the same variables found by policy scholars to study management innovation-ideology, neighbors, professionalization, professional association networks, size and capacity, and management entrepreneurs or champions. Public management studies quickly incorporated implementation stages, strategies for creating consistently innovative organizations, and the roles of managers in creating and managing innovations. Since the rise of network studies in the 1990s that covered questions of what makes an effective organization and how network centrality or strong and weak links matter in information diffusion, public management studies have used networks and information availability as key variables. These variables were not entirely missing in political science studies, but they were not as prominent. Furthermore, public management IAD studies have drawn on strategic management and collaborative governance literatures to test hypotheses about structure, processes, and strategy for their impact on management innovation. Moreover, public management has developed another model of diffusion-the Agent Network Diffusion Model-that explicitly brings into focus the role of managers, their career paths, and the knowledge gained from information networks.

PROMISING WAYS FORWARD IN POLITICAL SCIENCE AND PUBLIC MANAGEMENT IAD RESEARCH

Future research must broaden to consider IAD across all five stages of the policy process. The majority of studies examined the adoption of policies or their content change over time. More studies are reviewing IAD in other stages of the policy process. Gilardi, Shipan, and Wüest's (2021) empirical study addressed the relationship between policy diffusion and the issue-identification stage. Karch and Cravens (2014) demonstrated in their study that the determinants of the state adoption of three strike laws—that is, conservative leanings and higher proportions of African Americans in the state—are different from the factors associated with associated with local government's innovativeness. The extensive works of Karen Mossberger (2013, 2021) and Mary Feeney (2016; Grimmelikhuisen and Feeney 2016) are theoretically and empirically elegant.

Culture

From a macro perspective, the spread of policy from one region to another is inseparable from the influence of culture. Multiple scholars have found ample evidence of the role that culture has in promoting or restricting the diffusion of innovations. Weyland (2004, 2007) showed that more than a dozen Latin American countries adopted structural pension reform soon after Chile's pension reforms were enacted and received positive reviews. Both regional and cultural effects were evident. Simmons and Elkins (2004) argued that cultural similarity is a positive predictor of policy diffusion among different countries.

Time Boundaries for Future Study

Policy and management studies have not yet used the ideas and concepts from path dependency to a significant degree. Within policy work, Pierson (2000) introduced path dependency and historical institutionalism to a broad audience of comparative and political scholars. Path dependency can be viewed as a diffusion theory within a jurisdiction over time that constrains decision makers and narrows their options for policy or management choices due to the impacts and consequences of prior choices. The impacts of previous policy choices on the probability of adopting a new policy have all but been ignored in the empirical literature on government innovation. However, Bill Berry and I (1994) have argued that models of policy innovation must recognize the effects of one policy choice on another. Mahajan and Peterson (1985) identified four types of "innovation interrelationships": innovations may be (1) independent, (2) complementary, (3) contingent, or (4) substitutes. This

typology has relevance for explaining choices and change in IAD studies.

One example is from a study I coauthored with Huang (2019) in which we assessed whether innovative states enacting trafficsafety policies tend to enact these as complements or substitutes. We found that across 16 policies, states were more likely to adopt a comprehensive bundle of these policies as innovators and that national institutional "bandwagon" effects also were an important factor related to the increased comprehensiveness of DUI policies.

NETWORKS AND POLICY INNOVATION DIFFUSION

A central feature of political science is the dynamic interdependence among political actors. A study by Demarais, Harden, and Boehmke (2015) concluded that policy diffusion in the United States relies on the state's policy diffusion networks. Moreover, those states that share similar demographic and political features have a better opportunity to learn from one another. As I have argued, we need more studies using human social and work networks. A study by Bouche and Wittmer (2014) examined the factors that impact the comprehensiveness of state humanand product innovations found across all disciplines and IAD topics. Availability of resources, calculations of political gain, public support, weak opposition, and high capacity in the government or organization-as well as having a champion whether inside or outside of the agency who is influential and tenaciousare all associated with adoption. Understanding that diffusion is conditional on a number of key factors also helps us to understand policy-learning dynamics or pressures for policy imitation. Incorporating the most recent diffusion mechanism-the Agent Network Diffusion Model-and using insights from strategic management and collaborative governance theories can link micro- and macro-level variables with performance outcomes concerning innovations in our dynamic societies. We must continue developing models that address the content and impact of policy as well as simpler measures such as adoption.

Although data limitations are the primary reason that scholars have not done so yet, we must increase the range of independent variables that are more systematically measured and included in multivariate model tests. We need more com-

Political science and public management scholars learned from one another but have more to learn.

trafficking legislation and focused on the percentage of females in state legislatures. They found strong evidence that female state legislators represent a unique diffusion network for women's interests within their own legislature and across state networks.

Howlett et al. (2017) studied policy brokers and learning in networks related to sustainability policy and found in Indonesia that authoritative government officials are key to technical policy learning, forming the core of connections within the country's sustainability networks. Some environmental network studies in the United States (e.g., Lubell and Scholz 2002) also found government staff are central to creating and maintaining networks with advocacy groups, technical experts, and citizens.

ACTORS: CAREER PATHS AND POLICY INNOVATION DIFFUSION

In an article that I coauthored with Yi and Chen (Yi, Berry, and Chen 2018), we used air-quality outcomes as the dependent variable. The study results showed that when Chinese managers transferred from one province with improved air pollution to another province, the destination province also improved its air quality during the next few years. Managers take their knowledge and expertise with them. We call this the Agent Network Diffusion Model that explicitly brings managers into the IAD studies. Yi authored other studies (e.g., 2019) focusing on the positive role that managers play in US local governments. Teodoro's (2009) article also considered career paths and whether agencies hire within or outside candidates; he found that outside candidates are more likely to implement new policy innovations. Huang, Chen and Yi (2020) demonstrate the social influence of networks in environmental management.

CONCLUSION

Policy and management innovations follow many of the patterns established across countless studies of process and service parative country studies to learn more about different models and styles of promoting diffusion. From comparative studies of IAD, we discover more about the impact of institutional structures and national-government strategies on promoting and then diffusing successful innovations. The policy and management studies from China clearly show that Chinese leaders have adopted "championship policy diffusion," which encourages early experimentation and outcome evidence in provinces and cities. The most successful model then is mandated by the central government to other provinces or cities after performance results are available.

I applaud the direction that Shipan and Volden (2021) have taken in their newest book, Why Bad Policies Spread (and Good Ones Don't). They argue that if diffusion works like it should, good policies will diffuse and bad ones will not. Admittedly, as they acknowledge, in a highly polarized society such as the United States this can sound somewhat naïve. In fact, the book focuses on how we can promote diffusion by learning rather than imitation, competition, or coercion. To me, this is a commendable approach and truly builds on the vast knowledge we have of IAD studies. In chapter 4, Shipan and Volden develop about a dozen lessons about learning as a mechanism of diffusion that should promote sound policies. This includes such practices by policy makers as promoting the observability and the relative advantages of new policies, structuring intergovernmental grants to counteract competition while avoiding coercion, and using the states as "laboratories of democracy to experiment and find successful policies based on evidence-based results."

Political science and public management scholars learned from one another but have more to learn. This article omits many citations of studies that pertain to the issues raised and even important issues that I did not cover (e.g., what we learn from the speed of diffusion over time). However, I have demonstrated that we have built theories and knowledge about IAD studies in our fields that is useful to scholars and practitioners. I am confident that younger scholars will build on our work and make it even more impactful.

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CONFLICTS OF INTEREST

The author declares that there are no ethical issues or conflicts of interest in this research.

NOTE

 In 2022, one of political science's top IAD scholars—Chris Mooney—published a book entitled *The Study of US State Policy Diffusion: What Hath Walker Wrought?* (Mooney 2021), which I commend to readers for a detailed description of the political science policy IAD field.

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