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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

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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	*Public Choice* (*PC*)	*Journal of Policy Analysis & Management* (*JPAM*)	*Policy Studies* (*PS-UK*)	*Policy Sciences* (*PS*)	*Journal of Public Policy* (*JPP*)	*Policy Studies Journal* (*PSJ*)	*Journal of European Public Policy* (*JEPP*)
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
Intn'l 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.

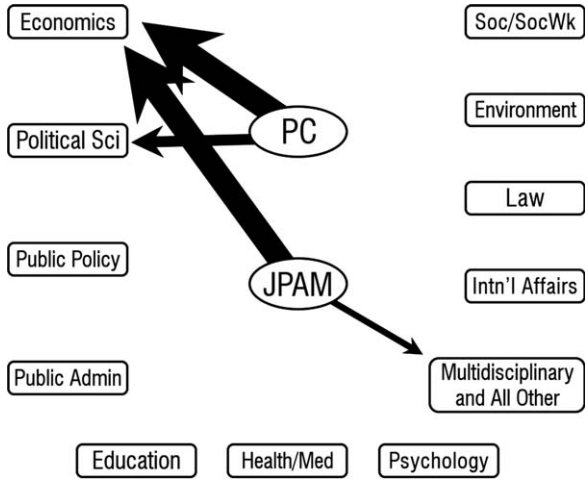

Figure 1. Interfield Networks of *Public Choice* and *Journal of Policy Analysis and Management* (Edges with Over 10% of Total Citations to All Other Journals).

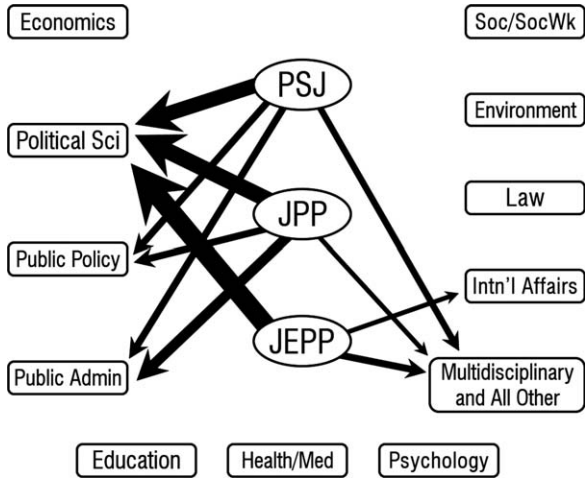

Figure 2. Interfield Networks of *Policy Studies Journal*, *Journal of Public Policy*, and *Journal of European Public Policy* (Edges with Over 10% of Total Citations to All Other Journals).

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

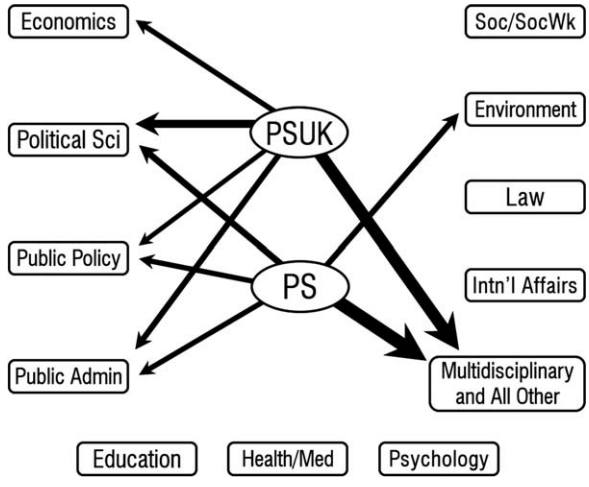

Figure 3. Interfield Networks of *Policy Studies (UK)* and *Policy Sciences* (Edges with Over 10% of Total Citations to All Other Journals).

(*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 multidisciplinary[5] 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	
Journal of Policy Analysis & Management	*Public Choice*	*Policy Sciences*	*Policy Studies*
• *Quarterly Journal of Economics*	• *American Economics Review*	*Energy Policy*	*Regional Studies*
• *Journal of Public Economics*	• *Journal of Public Economics*	*Research Policy*	*Urban Studies*
• *American Economics Review*	*American Political Science Review*	*Academy of Management Journal*	*Environment & Planning A*
Journal of Human Resources	*American Journal of Political Science*	*Academy of Management Review*	*Journal of Rural Studies*
Public Administration Review	• *Quarterly Journal of Economics*	*Journal of Public Policy*	*Public Administration*
• *Journal of Labor Economics*	• *Journal of Political Economy*	*Policy Studies Journal*	*Public Administration Review*
• *Review of Economics & Statistics*	*European Journal of Political Research*	*Public Administration*	*Geoforum*

Political Science-Oriented Policy Journals		
Journal of European Public Policy	*Journal of Public Policy*	*Policy Studies Journal*
Journal of Common Market Studies	• *American Journal of Political Science*	• *American Political Science Review*
• *European Union Politics*	*Journal of Public Administration Research & Theory*	• *American Journal of Political Science*
• *West European Politics*	*Public Administration Review*	*Journal of Public Administration Research & Theory*
• *European Journal of Political Research*	• *American Political Science Review*	*Journal of Policy Analysis & Management*
International Organization	• *Journal of Politics*	• *Journal of Politics*
• *Comparative Political Studies*	• *European Journal of Political Research*	*Public Administration Review*
• *American Political Science Review*	• *British Journal of Political Science*	*Policy Sciences*

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

	Citing Journal						
Journals Cited	*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)			—	0.1%			
Policy Sciences	>0.05%	0.1%	0.9%	—	0.9%	2.8%	0.5%
Journal of Public Policy	0.1%		1.4%	1.7%	—	1.8%	2.4%
Policy Studies Journal	>0.05%	0.9%		4.0%	1.3%	—	0.8%
Journal of European Public Policy	0.1%		2.6%	1.3%	4.5%	1.8%	—

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.

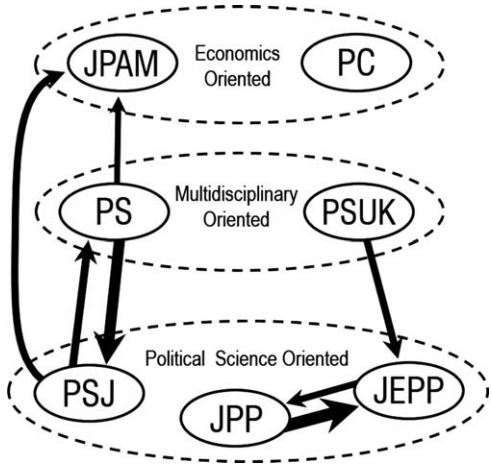

Figure 4. Intrafield Networks of Leading Public Policy Journals (Edges with Over 2% Citations of Total Citations to All Other Journals).

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

	Citing Journal			
Journals Cited	*American Journal of Political Science*	*American Political Science Review*	*Political Analysis*	*Journal of Politics*
American Journal of Political Science	—	8.3%	12.2%	15.7%
American Political Science Review	14.7%	—	12.2%	13.6%
Political Analysis	2.7%	2.1%	—	2.6%
Journal of Politics	7.1%	6.3%	6.7%	—
	American Economic Review	*Review of Economic Studies*	*Quarterly Journal of Economics*	*Economic Journal*
American Economic Review	—	13.4%	12.5%	17.7%
Review of Economic Studies	1.4%	—	2.6%	1.6%
Quarterly Journal of Economics	4.8%	3.3%	—	4.2%
Economic Journal	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	
Public Choice	14.8%	*American Journal of Political Science*	13.6%
Journal of Policy Analysis & Management	8.9%	*American Political Science Review*	14.5%
Policy Studies (UK)	6.9%	*Political Analysis*	13.4%
Policy Sciences	13.7%	*Journal of Politics*	8.9%
Journal of Public Policy	6.1%		
Journal of European Public Policy	22.2%	*American Economic Review*	18.2%
Policy Studies Journal	13.1%	*Review of Economic Studies*	7.5%
		Quarterly Journal of Economics	11.6%
		Economic Journal	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

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

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

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

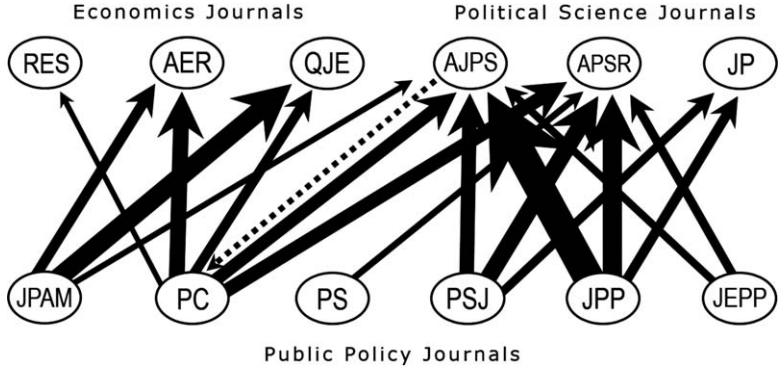

Figure 5. Directional Networks Among Public Policy, Economics, and Political Science Journals (Excludes Three Journals—*PS-UK*, *PA*, and *EJ*—without Any Edges Above 2% to Another Journal).

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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