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Editorial

Political networks

Politics is, at its core, a network phenomenon. Power—the central construct of political science— is intrinsically relational, where power exists between actors and among actors in a complex, differentiated fashion. India looms large for Nepal, not for Iceland. My boss is important to me, not you. More generally, we talk to people who affect what we think. Access and relationships among the powerful is indisputably important. One of the major subfields of political science is actually called international *relations*. And, as discussed below, there is a long standing interest in political science in networks, from the first years of the emergence of sociometrics. Perhaps the earliest effort in detecting clusters from relational data, one of the hottest areas in the study of networks currently, appeared in the *American Political Science Review*—in 1927 (Rice, 1927)! The first author on the first paper in the first issue of *Social Networks* was by one of the giants of 20th century political science, Ithiel de sola Pool. This paper, circulating in unpublished form starting in the 1950s, was also the first to formulate the small world problem. One of the key drivers of the interest in networks the last 20 years has been the vein of research on social capital—in part kicked off by research by a political scientist, Putnam et al. (1993), Putnam (2001). Given this history, it is therefore surprising that in the 20th century networks as a construct did not find a comfortable home within the discipline of political science, with a minimal presence in disciplinary journals. This has changed dramatically in the last decade, as part of a broader upsurge in interest in networks within the academy. One small illustration of this may be seen by the increase in the presence of networks at the annual meeting of American Political Science Association. A perusal of the program would have yielded few if any explicitly network related papers in any given year in the 1990s. In contrast, in the 2013 program there are 23 network-themed *panels*, and over 100 papers explicitly evoking network concepts and data. This special issue thus represents an overdue reunion for the discipline and social network analysis.

Our objective in this paper is to provide an overview of the trajectory of the research on political networks, and to place the contributions in this issue in that context. We begin with a short intellectual history of the long standing, if thin, history of network scholarship in the study of politics, maneuvering through the various, loosely coupled subfields of political science, and concluding with a discussion of what impact political science will have on the field of social networks as both move forward together.

1. A political networks agenda

Despite sharing deep intellectual roots with social network research (e.g., Berelson et al., 1954; Routt, 1938), modern political science has been dominated by theories and methods that presume the independence of actors. In a discipline where some of the most central questions focus on institutions, organization, communication, and influence this may seem strange (Lazer, 2011). We attribute the absence of network research in political science to a combination of factors. Perhaps most importantly, the maturation of the study of politics as a science occurred at the same time that behaviorialist and rationalist theories of human behavior became popular. With respect to the former, the institutionalization of the American National Election Study and the concomitant reification of random samples as the idea observational research had a strong effect on political science methodology and data. Simultaneously, the received wisdom of political science research faced a significant challenge from elegant theories of behavior that prioritized assumptions of individual rationality and saw institutions principally as rules that shaped incentives. Though political science reaped tremendous benefits from both intellectual traditions, we argue that they pointed away from the potential insights and questions generated by relational theories and methods (McClurg and Young, 2011).

The fundamentally relational aspects of politics perhaps made it inevitable that social network analysis would eventually gain a robust foothold in the discipline. With a commitment to seeing the political world as interdependent, social network research has been able to raise new theoretical and substantive questions in some of the well-tilled intellectual ground in political science looking for an infusion of fresh approaches Not surprisingly, these areas – the study of international relations, political organization, and legislative behavior – are well represented in this issue.

1.1. International relations

The study of international relations focuses on a wide array of issues, ranging from broad reaching analyses of the international systems to the flow of goods between nations to the nature of intrastate violence. Given the depth and breadth of research covered by social scientists interested international relations, it is impossible for us to give it a suitable definition that captures its diversity. Suffice it to say, many of the central theoretical and substantive issues that motivate political science depend upon on whether important actors – nations, international organizations, and various non-governmental actors – are in a state of conflict or cooperation. That is to say, understanding *connections* and *relationships* are front-and-center in the study of international relations.

Nevertheless, international relations research was slow to adapt the techniques and theories of social network networks. The

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language used is often in the spirit of SNA – countries that exchange goods are "partners"; mutual defense treaties "tie" nations together; regional conflicts are oft described as described as proxy wars between nations that are in the "spheres of influence" of larger nations; and, the "diffusion" of technology is a subject of trade agreements and conflicts. In particularly striking example, one of the prominent quantitative datasets organizes international conflict as a series of "dyads." Yet despite the widespread of relational language, the theory and methods have not been explicitly relational until recently (e.g., Ward et al., 2013; Cranmer et al., 2012; Perliger and Pedahzur, 2011; Maoz, 2011; Hafner-Burton et al., 2009).

Three contributions in this volume add to this body of work. Cranmer et al., 2013 explore economic sanctions in international system with the goal of explaining its power as a policy tool. They observe that sanctions are often the result of coordinated behavior and then construct a theoretical argument that highlights the role of endogeneous network effects in explaining sanction behavior. This paper relies heavily on advances in exponential random graph modeling to include the effect of over-time observations of actors and networks. Breiger et al., 2013, in turn, reconstruct what are often seen as attribute data into multi-mode network data, allowing the importation of multi-mode methods to understand standard case by variable data. They illuminate these methods through application to understanding the complex contingencies associated with the involvement of terrorist groups' involvement in the drug trade. Finally, Rhue and Sundararajan (2013, From this special issue) demonstrate the international relational dimension of domestic institutions, examining the impact of the interplay of domestic interconnectivity (mobile phones and Internet) and domestic institutions of neighboring countries on civil liberties and democratic practices in a country.

1.2. Political organizations

Early theories of American politics clashed over the degree to which its polity was truly democratic, or ruled by a "power elite" (Mills, 1956). At the center of this debate was a question of political organization – did organized interests or political parties do a better job representing the public? Pluralists like Truman (1951) built on the logic of the Federalist Papers to suggest that organized groups would naturally arise to represent a plethora of interests and, in the struggle for power, balance each other out. Such arguments were forcefully countered by the Schattschneider (1960) argument that the connection of party success to electoral outcomes would prevent government of the few.

This area of research did not adopt the language of connectedness, focusing instead on how "interests" became organized and influential. Perhaps ironically, the role of cooperation – a relational concept – as a necessary condition of power did not become central until after the implications of individual rationality for collective action were laid bare (Olson, 1965; Salisbury, 1969). Even then the intellectual conversation remained focused on individual motivations rather the relational dimensions of political organization, power, and representation.

Over time, two things opened the door toward relational work. First, empirical research on the role of interest groups in the policy process revealed the importance of *issue networks*. This theory demonstrated that the groups of actors (legislators, interest groups, and bureaucrats) who exercised power in particular issue domains were not always institutional competitors and, quite often, collaborators who protected the status quo (Heclo, 1978; Heniz et al., 1993). Second, changes in the American election system – highlighted by increasing independence of candidates for office from local political party organizations – led a generation of scholars to explore the continued existence – and eventual adaptation – of political parties. A key insight emerging from work was that even though politicians were **not dependent** on parties for resources and validation neither were they **independent**. Social network analysis has emerged as a viable framework from which to theorize and analyze a middle ground focusing on the structure of interdependence among political organizations.

In both of these strands of research, it eventually became evident that individual actors – party organizations, interest groups, candidates, and others in the policy process – are not always competitors for influence. Instead, they often form connections that are at times fluid and at other times enduring. This in turn suggested a host of new substantive questions about organized influence in politics that centered on explaining relationship formation and impact in political organization (Koger et al., 2010; Masket, 2009; Cohen et al., 2009).

This special issue offers several representatives of this stream of research. Parigi and Sartori (2013) use network data on Italian political parties from the 1970s to examine the role of social cleavages in shaping parties-as-networks. Although they use roll call data, their results build on the organizational themes we develop above. In particular, they demonstrate that internal networks become much stronger in the presence of "external social cleavages." This suggests that the theory of networked parties may be a generalizable way to think about the behavior of parties, interests, and government.

Heaney (2013) contribution also focuses on political organization, albeit in the domain of interest group influence. The innovation of this paper is to consider the relational dimensions of reputation. This paper is technically sophisticated, using both the concept of multiplexity and the method of exponential random graph models to gain more insight in interest group reputation. Empirically, the analysis shows that communication networks are *especially important* even while considering issue networks and coalitional bonds. Similarly, Box-Steffensmeier and Christenson (2013) examine interest groups cooperation in the arena of judicial politics. This analysis fits the general theme of networks-as-power by demonstrating that over time particular groups become central to organizing legal action between similar interests. These results extend earlier research into an area of politics (the law) that has non-electoral rules on participation, but still exhibits interest polarization. While polarization is often attributed to changes in electoral institutions, this paper suggests that the origins may lay elsewhere, particularly in institutions that shape network relations.

1.3. Legislative influence

Social network analysis also has a longstanding foothold in the study of legislative organization and decision-making (Routt, 1938; Patterson, 1959). Legislative studies – particularly in the United States and democratic nations – often center on questions of *dependence*. This stems from the presumption that legislators *should* represent public interests (Pitkin, 1967). Coming from this foundation are a host of questions that are the object of empirical research. Do legislators serve in the interest of their electors? Are the agents of other political elite, such as parties or interest groups, more powerful than the public? How important are institutions and rules in shaping the behavior and power of legislators?

Again, we would argue that these involve interdependence. However, they have traditionally been treated as questions of *dependence*. The distinction is that those connections seem more like contracts than they are *relations* between actors. Such legislative contractual relationships can be – and have been – studied with the tools of game theory, bargaining theory, organizational theory, and other rationalist approach. The (unconscious) decision to use these tools rather than those of social network analysis is likely a combination of happenstance and the characteristic of legislatures. With respect to the former, rational choice became a popular

approach at the same time that the American legislature experienced change in leadership rules, committee and subcommittee change, and other factors that drew the attention to the subject. But it also likely reflects the nature of the subject, namely that to study legislators is to understand the importance of institutionally constrained choice. However, recent scholarship has begun to think about legislatures not only as institutional places that organize constrained decision-makers, but also a social space that organize opportunities to build social relationships based on common interests (Fowler, 2006; Victor and Ringe, 2009).

Some of the most prominent network research involving political science research focuses on legislatures. This special issue includes a contribution to this substantive area, as well as methodological contributions to SNA. In their paper entitled "Measurement and Theory in Legislative Networks," Justin Kirkland and Justin Gross forcefully argue that earlier work in this vein over-aggregates the data and therefore misses important variation in cosponsorship networks. In addition to making a contribution to the measurement of these network ties (see below), this paper uses different levels of observation and network dynamics to highlight the importance the legislative institution in shaping network outcomes. This point is potentially important for joining institutional theories of legislative behavior – often built on rationalist assumptions – with network ideas.

1.4. Established ideas seen with new light – the impact of political science on SNA

Just as established social network theory and methods have transformed areas of inquiry in political science, so can political science impact the study of social networks. To be sure, some of this simply is a matter of introducing new substantive questions and data into the established mix of topics and theory that constitute the current body of social network literature. Yet we believe that political science can contribute to *core concerns*.

There are at least three reasons this is the case. First, the prominence of methodological individualism among political scientists brings a different set of priorities in to research than the traditionally more holistic social network program. Although the insistence of working with individual observation has been a barrier to the study of political networks in the past, it also provides a foundation on which to reconsider the epistemology underpinning social network research. By considering a host of different models of individual choice, political science can introduce a wider array of models of how networks begin, evolve, end, and create individual patterns of influence. That is, historically social network research has put an emphasis on social structure as an exogenous force on actors. The study of politics necessarily puts more of an accent on the emergence of networks by strategic actors. That is, from a political networks perspective, networks and actors co-evolve (Lazer, 2001). While this reflects a broader trend in the study of social networks (e.g., Lomi et al., 2011), political phenomena will naturally place a strong emphasis on individual agency playing a role in constituting networks.

The second reason relates to the first. Because of the adherence to methodological individualism, the starting point for most political scientists will *not* be to assume that networks influence individuals. Especially of late, political science has placed great value on establishing more certain and precise estimates of *causal relationships* between independent and dependent variables. This means that political scientists are especially concerned with research designs that account for endogeneity, selection bias, omitted variable bias, and efficiency in understanding both the formation and influence of networks. In particular, we anticipate that there will be considerable interest in *network influence* in political science because of the distinct emphasis on individual outcomes. Though social network analysis is not blind to these issues, the introduction of political science should add more momentum to this area. Nickerson (2008), published in the flagship journal of political science, is illustrative, presenting a field experimental design that allows robust causal inferences of social influence with respect to voting. These sensibilities around research design and inference may offer significant insights regarding networks more generally.

Finally, the idea of what a link – or a relationship – is between actors will also be impacted by political science. At some level this is simply a matter of changing content, illustrated by the adaptation of the familiar "important matters" name generator (Burt, 1984) into a "political matters" discussion battery (Huckfeldt and Sprague, 1995; Klofstad et al., 2009). But more generally it has the potential broaden the conversation on what is a meaningful link. For example, Fowler's work on cosponsorship in the U.S. legislature "links" members of Congress together via their presence on bills. Without questioning the work itself, this way of connecting actors raises many issues. For example, is there a threshold at which the value of the edges gives us declining information about the network? Is the first link (or absence of one) more important than the one hundredth? While these sorts of issues are part and parcel of social network analysis, the data and theory from political science can only add to this discussion by presenting new perspectives.

Three of the papers in this issue touch on these first two issues. One is the paper by Huckfeldt et al. (2013), which uses an experimental design to leverage the impact of expertise in network diffusion processes. By manipulating levels of bias for and private knowledge about information, they are able to explain the unequal impact of expertise on small groups of people. The key lesson is that it is relatively low influence of the network on experts that supports social influence generally and leads to more heterogeneous communication in the overall group. Enemark et al. (2013) are similarly interested in rational models of communication, though their focus is more squarely aimed at overall levels of cooperation in groups rather than the role of the component parts. The central question in this paper is whether knowledge about the network itself can speed up cooperation, even across more complicated structures. With respect to question of causality, these two papers demonstrate that outcomes (both individual and aggregate) are reflective of structural and informational conditions in ways that cannot be clearly "pulled apart" in observational data.

That said, the third paper directly examines of whether selection of partners is more important than social influence using observational data. Although Bello and Rolfe (2013) use of observational data does not provide the same leverage as the experimental papers, its primary conclusions echo those of the experimental papers. In particular, even after accounting for personal incentives or preferences, many people are influenced by those around them. Importantly, the analysis of repeated interactions of people from a general population sample supports the same general conclusions of the other papers, though in an externally valid context. Though the many nuances of why, when, and how social connections remain on the horizon, these papers are part of a growing body of evidence supporting the conclusion that network connections and structure influence political behaviors (Sinclair, 2012; Rolfe, 2012).

Three other papers focus on the issues surrounding measurement and concepts. Sokhey and Djupe (2013) consider the common "name generator" approach for identifying network partners in egocentric network, using a set of survey question experiment to explore the nature of personal political links. Their wide-ranging indicators of measurement validity not only help specify the limits of the political name generator, but also highlights the importance of theorizing clearly about the meaning of a network tie relative to the network theory/argument being offer. Smith et al. (2013) are equally as concerned about measurement in a network context,

but focus on actor positions rather than the underlying links. Drawing from a theory of political power that recognizes both alliances ("positive" ties) and adversarial relationships ("negative" ties), they develop a measure of network independence. This paper not only contributes to the study of conflict (and its relative causes), it also illustrates a creative way to think about levels of interdependences. This should have significant consequences for those who take interdependence seriously but have come to understand that not all entanglements are equal. Finally, Golbeck and Hansen (2013, In the special issue) offer an approach to measure the ideology of the Twitter audience based on the link structure of Twitter accounts to Members of Congress.

2. Conclusions

Under the onslaught of the research on networks, political science has begun to shift from its often asocial, atomistic moorings to become, literally, a more social science. We believe that this is a healthy move, paradigmatically. There are few political phenomena at any level of analysis that do not have a relational aspect. Political opinions do not form in a social vacuum. Coalitions must in part reflect prior relationships and collaborations. Conflict between nations must in part depend on the relationships of those states with third parties. Power is not a unitary construct but dependent on a broader field of connections among actors and resources. We anticipate further growth in this space for supply and demand reasons. On the demand side, the marginal returns are still quite high because of its relative under development in the discipline. On the supply side, there has been a proliferation of data sources, statistical tools, and training (inside and outside the discipline) to make the study of networks far more tractable now than even just a few years ago. The contributions in this volume thus represent a downpayment on intellectual dividends to come.

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