The Education Policy Center
AT MICHIGAN STATE UNIVERSITY

WORKING PAPER #45

Moving Towards an Integrated Theory of Policy Networks: A Multi-Theoretical Approach for Examining State-Level Policy Change in U.S. Subsystems

Sarah Galey
Michigan State University

Peter Youngs
University of Virginia

December 2014

Moving Towards and Integrated Theory of Policy Networks: A Multi-Theoretical Approach for Examining State-Level Policy Change in U.S. Subsystems

Author Information

Sarah Galey
College of Education
Education Policy Center
Michigan State University

Peter Youngs
Curry School of Education
Univesity of Virginia

Acknowledgements

This work was supported in part by funds from the Education Policy Center at Michigan State University.

Moving Towards an Integrated Theory of Policy Networks: A Multi-Theoretical Approach for Examining State-Level Policy Change in U.S. Subsystems

Sarah Galey

Education Policy Center

Michigan State University

Peter Youngs

University of Virginia

Policy scholars have developed a number of theoretical models to help explain the policy process, including relative trends of policy stability and policy change over time. Changes in policymaking in subsystem sectors, such as education, agriculture, transportation, and health, are often relatively slow and incremental. The same group of policymakers and organizations dominate subsystem decision making for long periods of time, reflecting the long-term interests of an established elite – a phenomenon sometimes referred to as a "policy monopoly" (Baumgartner & Jones, 1991; Baumgartner & Jones, 1993; True, Jones, & Baumgartner, 2007). The reverse of policy stability is policy change. Why do policies emerge? Why do new policy beliefs and ideas surface, giving way to dynamic periods of reform, flux and unpredictability? In education policy, for example, performance-based accountability systems and school choice programs – practically nonexistent 20 years ago – are central features of state subsystems. Why do political systems enact such major policy changes? Does change emanate from human agency or broad, socioeconomic conditions? Are political institutions able to adapt to major change or do they resist it?

Scholars have developed a wide range of theories to explain both stability and change in policy subsystems. In recent years, a burgeoning literature has emerged that focuses on the application of network analysis in policy research, more formally known as Policy Network Analysis (PNA). This

This work was supported in part by funds from the Education Policy Center at Michigan State University

approach, while still developing, has great potential as an integrated theoretical framework that brings together multiple theories under a single conceptual paradigm. In this paper, we demonstrate how the insights of three other established policy theories – namely, the Advocacy Coalition Framework (ACF), Punctuated-Equilibrium theory (PET), and the Policy Entrepreneur Model (PEM) – may be augmented under a synthesis theory of policy networks to provide a more conceptually coherent theory of policymaking that may be useful for explaining periods of both stability and change.

To start, combining Policy Network Analysis (PNA) with the Advocacy Coalition Framework has been a useful approach for explaining patterns of group formation and collective action in policy arenas (e.g., Sabatier & Weible, 2005; Henry, 2011). The Advocacy Coalition Framework (ACF) articulated by Sabatier (1988) and Sabatier and Jenkins-Smith (1993) is frequently employed to explain periods of policy stability. Recent developments in ACF theory recognize the importance of interpersonal relationships and policy networks in facilitating the exchange of policy resources and in shaping decision-making in policy subsystems (Sabatier & Weible, 2007).

At the same time, many questions remain regarding periods of dynamic policy change. How and why do policies suddenly change? Furthermore, how do sudden changes impact policy subsystems, particularly the established advocacy coalitions and governing institutions within those subsystems? Baumgartner and Jones' (1993) Punctuated-Equilibrium theory (PET) helpfully addresses many of these issues, focusing specifically on predictors of sudden and dynamic policy change, or "punctuations," that interrupt stable subsystems, or "equilibriums." In addition, agenda-setting literature (e.g., Kingdon, 1984) and the literature on ideational politics (e.g., Heclo, 1978) indicate that policy entrepreneurs are key change agents during transitional periods (Mintrom &Vergari, 1996).

The purposes of this essay are two-fold: (1) first, we outline a useful theoretical perspective for the substantive analysis of contemporary policymaking in state subsystems, and (2) second, we

contribute to the emerging field of policy network theory by constructing a set of causal assumptions and empirically testable hypotheses about state-level networks and dynamic policy change. We begin this paper by outlining the synthesis approach for using multiple theories in policy research. We then review the theoretical and empirical foundations of Policy Network Analysis (PNA), as well as the salient features of the ACF, PET and PEM for building on current PNA theory. We explicate how each of these theories provides insight into the formation and dynamics of policy network, as well as how these theories can be synthesized under PNA to create an integrated theory of policymaking.

Given the rising importance of state governments and policy actors – as opposed to their federal and local counterparts – in the formulation and implementation of public policy, we prioritize our analysis at this level. This focus is apt given the use of policy network theory as both a theory of *interest intermediation* and *network governance*. We find that an integrated PNA framework is useful for examining complex intergovernmental policy processes, as well as public-private hybrids of governance – both features of U.S. federal-style policymaking in general, and growing concerns in many state policy subsystems specifically. In the conclusion, we return the discussion to a more general level, reviewing some of the major lessons about the potential for PNA learned from this analysis that can be applied to future studies of policy networks and policy change.

Combining Multiple Theories: The Synthesis Approach

In a recent review of "multi-theoretical" approaches in policy studies, Paul Cairney (2013) identifies three distinct strategies used by policy researchers for combining multiple theories: *contradictory*, *complementary*, and *synthesis*. In the "contradictory" approach, scholars compare and contrast the usefulness of different theories of the policy process for understanding policy change, often

culminating in a "shoot out" in which one theory is singled out as "the best" because it appears to better explain policy outcomes, or simply because it is the "most scientific" (Cairney, 2013, p.1). Meanwhile, the "complementary" approach, or the "multiple lenses" approach, brings different theories together to improve our understanding of a particular case or event: "Analysts draw on explicit or implicit 'conceptual lenses,' and the promotion of multiple lenses should allow us to become more aware of the assumptions that underpin each lens and to compare perspectives." (Cairney, 2013, p. 8) Both of these approaches, however, remain firmly embedded in pre-existing theory and are mainly useful for improving research design and refining existing theories – not for creating theory or developing new causal mechanisms and hypotheses. In contrast, the "synthesis approach," employed in this paper, blends together multiple theories in order to create a more unified theoretical framework. Indeed, the focus here is to promote theory building by drawing on salient concepts from multiple theories and is focused on testing hypotheses for new theories.

This approach is notably articulated in the work of Peter John (1998; 2003; 2012), who aims to produce a new "synthetic" theory that accounts for the complex and dynamic world of policymaking. John (2012) argues that five broad theoretical perspectives currently exist that can help explain the policy process: *institutional* perspectives, *groups and networks* perspectives, *exogenous* perspectives, *rational actor* perspectives and *ideas-based* perspectives.

Each of these perspectives offers a convincing account of the policy process and many of them claim to be "*the* theory of public policy," but they all tell an incomplete story – often because they fail to incorporate key aspects of the other perspectives (John, 2012, p. 12). For example, group and network perspectives focus on the associations, or links, between policy actors that sidestep institutions, emphasizing group influence over policy decisions. In doing so, group perspectives frequently

undermine the importance of the rules and structures of the institutions in which those decisions take place.

Likewise, institutional perspectives stress the formal arrangements of policymaking, such as electoral systems, government bureaucratic processes, and constitutional features, but these models are typically static in nature, not accounting for the dynamic nature of the policymaking environment. While it is clear that institutional arrangements are important predictors of policy outcomes and outputs, they do not explain policy change very well. There is little explanatory power when institutions are weak and powerful groups are able to circumvent their authority. In other words, they do not account for the informal group processes that shape policy sector dynamics and often lead to policy change.

John (2012) concludes that only an "integrated framework" that utilizes insights from all of the perspectives can "fully explain the variety and complexity of the practice of policymaking and implementation" (p. 13). In this essay, we argue that policy network theory has potential to do just this when synthesized with other complex theories of the policy process.[1] While John subsumes policy networks as a modern iteration of the group perspective, we contend that it can be much more, particularly given the more frequent inclusion of rigorous formal network analysis into contemporary policy network literatures (e.g., Frank et al., 2012; Henry, 2012; Leifield & Schneider, 2012). Importantly, John (2012) warns against any frivolous forays into this kind of theory-building exercise that might result in an unfocused multi-theoretical framework that just describes decision-making rather than explaining it. Thus, we initially consider all five of the theoretical perspectives laid out by John as we develop a synthesis theory of policy networks.

[1] Although John eventually developed his own synthesis theory of the policy process – evolutionary theory – in earlier discussions he conspicuously points to network theory as "the best candidate" for developing an "all-encompassing" theory of public policy (John, 2003, pp. 485-6).

Despite policy network theory's great potential to theoretically and empirically link complex inputs and outputs of policymaking systems, so far it has fallen short (e.g., Borzol, 1997; Dowding, 1995; Peterson, 2003). In part, this is due to the adolescence of the field in general, but more explicitly policy network theory lacks a unified set of causal explanations for developing and testing empirical hypotheses – the core activity of social science research, specifically, and theory-building, in general (Cairney, 2012; Dowding, 1995). Like other policy network scholars (e.g. Adam & Kriesi, 2011; Kenis & Raab, 2003), we contend that a more systematic incorporation of formal networking technique in the vein of Social Network Analysis (SNA) is the best, and most logical, step forward in establishing a clear set of causal processes that can be associated with a broad policy network theory. This focus can be broadly construed a Policy Network Analysis (PNA) – most notably articulated in the work of David Knoke (1990a; 1990b) and Rod Rhodes (1988; 1999; 2006) and their collaborative work with others (Lauman & Knoke, 1987; Knoke, Pappi, Broadbent & Tsujinaka, 1996; Rhodes & Marsh 1992).

In the next section, we review the emerging contours of PNA, as well as its potential and limitations. We then explore major overlapping concepts in the other three theoretical models – the Advocacy Coalition Framework (ACF), Punctuated Equilibrium theory (PET), and the Policy Entrepreneur Model (PEM). We suggest how these theories of the policy process shed light on the causal processes of policy networks. Notably, all of these theories integrate some or all of John's five theoretical perspectives to some degree. We draw on the salient concepts from these diverse theories, articulating them in network terms.

Policy Network Analysis

Network analysis abounds across the social science disciplines. Network scholars vary in the way they use network concepts, but generally they embrace a "structural view" of social and political problems seeing the "patterning of connections as both a cause and consequence of human behavior" (Kadushin, 2012, p. 30). In political science, political networks are emerging as a significant subfield with studies spanning a diversity of domains, ranging from international relations to legislative collaboration, from political communications to electoral behavior (PolNET, 2014). Within this flourishing area of research, policy networks are a major conceptual paradigm. In close relation, Policy Network Analysis (PNA) serves as the primary theoretical and empirical vehicle for examining policy networks in the social sciences. As defined by Rhodes (2006, p. 424):

> "Policy networks are sets of formal institutional and informal linkages between governmental and other actors structured around shared if endlessly negotiated beliefs and interests in public policymaking and implementation. These actors are interdependent and policy emerges from the interactions between them."

Thus, the basic building block of policy networks involves the bargaining between actors with resources in an environment where power structures are shaped by formal institutional arrangements and influenced by informal relationships.

At the same time, there is a "Babylonian variety" of distinct interpretations and applications of the policy network concept (Borzol, 1997, p. 2). In general, these differences split along two clear "fault lines." The first fault line is methodological and involves the distinction between qualitative and quantitative network analysis (Borzol, 1997; Adam & Krisi, 2007). Developing along a trajectory comparable to formal Social Network Analysis (SNA) in sociology (see Kadushin, 2012), the quantitative approach uses similar methodologies (as SNA) to understand how social and political structures impact policy processes and outcomes. The qualitative approach, meanwhile, is

process-oriented and focuses more on the content of social and political interactions within the context of a particular policy network structure. Studies in this vein typically utilize qualitative methods, such as in-depth interviews and content and/or discourse analysis to explain how networks and relationships shape policies and processes. Although there are clear and consistent differences between quantitative and qualitative policies network approaches, these distinctions appear to be more practical than fundamental (resource and time constraints at the study design stage often necessitate the use of one or the other). The two approaches are complimentary and are easily – and more often in current research – used in tandem in a hybrid "mixed-methods" approach (see, for example, Henry, Lubell, & McCoy, 2010).

Therefore, our review of the policy network literature therefore is organized around the second, more relevant, fault line – that between interpretations of policy networks as a typology of interest intermediation and interpretations of policy networks as a specific form of governance.[2] *Interest intermediation* interprets policy networks as a mediating factor in the relationships between the State and organized interests. On the other hand, concepts of *network governance* view policy networks as a necessary solution to collective action problems where political resources are shared across a loose coordination of private and public actors. Importantly, the distinction between these two interpretations of policy networks is not always clear, and in any case they are not mutually exclusive (Adam & Kriesi, 2007; Borzol, 1997). Next, these two views of policy networks are briefly described, and then an alternate approach that brings these concepts of policy networks together under a single theory is introduced. We argue that both points of view can be utilized in harmony to better understand different dimensions of policy networks and to overcome theoretical confusion in the emerging field of PNA.

[2] This distinction made in a number of literature reviews of the policy network approach, see for example, Adam and Kriesi (2007), Borzol (1997), Peterson (2003), and Rhodes (2006).

Interest Intermediation

The interest intermediation school of thought examines the relations, or "ties," between government institutions and societal interests. This approach posits that policy networks may be applied generically to a variety of policy-specific subsystems across international, national, and sub-national contexts. Knoke et al. (1996), for example, examine the differences and similarities among policy networks in national labor policy domains in the U.S., Germany, and Japan. Differently, Knoke and Laumann (1987) compare and contrast the characteristics of federal energy and health policy networks in the United States. Importantly, this research stream is rooted in classic political literature on pluralist and/or corporatist models of the state. Developed by political scientists, such as Truman (1951), pluralism was used to describe modern democratic systems of governance comprised of a variety of relatively equal, competing interests with institutions acting as a neutral arbitrator. The steep growth of interest group activity in the U.S. since the 1970s has been complimented by an abundance of studies examining the origins, strategies, and goals of associations and corporate actors that seek to influence policy processes and outcomes (e.g., Berry, 1984; Walker, 1983).

Like pluralism, corporatism emphasizes organized interests and their connections to the state, but is limited to a particular structure of interest representation where there are strong state administrative arenas. Traditional corporatist models as defined by Schmitter (1979) stress "intermediation" in a group system characterized by a top-down structure where "peak interest associations" correspond to a more centralized and autonomous state that is resistant to outside interest group influence. To some degree, policy network studies have evolved along pluralist-corporatist lines with many scholars comparing patterns of policy networks between state and industry (e.g., Atkinson & Coleman, 1985; Atkinson & Coleman, 1989; Boase, 1996). When comparing health insurance policy in Canada and the U.S., Boase

(1996) for example, concludes that pluralist networks in U.S. are a result of a weak state, while the corporatist networks in Canada arise from a strong state. Even within the same country, different network structures can come to bear on different policy sectors. In Canada, for example, Atkinson and Coleman (1985) find that the Canadian dairy industry sector reflects corporatist network structures, while the pharmaceutical sector is dominated by pluralist network structures.

This essay echoes prior literature arguing that PNA presents an alternative to the dichotomous "pluralism-corporatism" model (e.g., Lauman & Knoke, 1987; Rhodes & Marsh, 1992; Knoke et al., 1996) in favor of a new, more finely-grained typology, "in which the network is a generic label embracing the different types of state/interest relations" (Borzol, 1997, p. 4). This orienting framework is linked to concepts of the "organizational state" in liberal democracies (see Lauman & Knoke, 1987 and Knoke et al., 1996), which stipulate that modern state-civil society relationships are becoming increasingly fuzzy, resulting in a confusing patchwork of interorganizational influence and power structures. The organizational state perspective conceptually links the "macro-structures of institutional power" with the "concrete microstructural relations of informal power," allowing the incorporation of key network metrics to engage in rigorous hypothesis testing using quantitative methodologies (Knoke et al., 1996, p. 3). From this perspective, policy networks at various levels of the government (e.g., national, sub-national, local) mediate and shape interest group interactions, which include governmental and nongovernmental actors, with important consequences for power distribution in the policy subsystems of liberal democracies (Rhodes & Marsh, 1992).

Altogether, these literatures suggest that particular network structures have important consequences for policymaking behavior and decisions, implementation processes, and policy outputs and outcomes. As such, a variety of "network typologies" have emerged from this branch of policy network literature that generally relate the structural attributes of policy networks to different types of

policy subsystem interactions and outcomes. The typologies, however, differ from each other according to the dimensions along which the different types of networks are distinguished. Jordan and Schubert (1992), for example, base their typology on three criteria: institutional strength (stable/unstable), the scope of policymaking (trans-sectoral/sectoral), and constraints on participation (restricted/open). Meanwhile, Adam and Kriesi (2007) present a two-dimensional typology of network structure based on observable compositional (i.e., actor types) and relational (i.e., frequency/quality of network ties) characteristics. They posit that these dimensions produce different "interaction modes," such as conflict- or collaboration-oriented modes that lead to different types of policy outcomes – a policy subsystem with high levels of conflict, for example, will be associated with rapid (serial) policy shifts, while those with a bargaining structure will experience more incremental policy change.

In his work, Rhodes (1986; 1988) distinguished among five types of policy networks according to levels of integration between network actors based on three categories: the level to which their members are integrated, member type, and resource distribution. Policy networks, he argued, could be seen along a continuum based on these dimensions with highly dense, exclusive "policy communities" on one end of the spectrum and diffuse, porous "issue networks" at the other end – with, in order from the most to least dense, professional networks, inter-governmental networks, and producer networks lying in between (Rhodes, 1988).

The common thread of the typology approach is in the use (or potential use) of common network metrics, such as density and centralization, to define and operationalize conceptual network structures. In this sense, power dynamics are an important feature of policy networks. If power is concentrated into a "policy monopoly" and interactions are cooperative, there is little opportunity for change. On the other hand, if power is fragmented, this indicates a high potential for challenging actor coalitions to enter the policy subsystem, leading to serial shifts in policy (Baumgartner & Jones, 1991; Adam & Kriesi, 2007).

Network research confirms this premise (e.g., Ball, 2008; Howlett, 2002); in one study, Héritier and Knill (2001) examine how EU member nations mediate the input of European railway policy, observing that reform is more likely in countries where political power structures are stratified and competitive. Importantly, this approach accommodates policy network structures as both an outcome and an input for hypothesis building (Peterson, 2003).

Network Governance

In contrast to the interest intermediation school of thought, the governance school interprets policy networks as a specific form of governance, as a "mechanism to mobilize political resources in situations where these resources are widely dispersed between public and private actors" (Borzol, 1997, p. 4). Many researchers limit their use of network governance to *analytical models*, which are useful frameworks for interpreting the observed policy network dynamics and the outputs associated with them, but are descriptive in nature; making a causal inferences in these situations seem tenuous at best.

Still others take a more overarching theoretical view, insisting that governance by network is a byproduct of modern societies, pointing to patterns of "increasing international, sectoral and functional overlap of societal subsystems," which reflect a changed relationship between the governments and society. Some European researchers especially claim that networks are so ubiquitous that they are now the primary form of governance – a "networked polity" – in certain international/national/domain-specific contexts, such as the European Union (e.g., Ansell 2000; Ball, 2009; Pfetsch, 1998). Consequently, traditional policymaking systems are ill equipped for addressing contemporary "complex systems" (Kenis & Schneider, 1991). This holistic point of view departs from the assumption that "territorially and functionally disaggregated" modern government systems have fundamentally changed

the nature of policymaking (Hanf and O'Toole, 1992, p. 166). Policy subsystems in this spirit rely on the horizontal, self-organizing coordination between a wide variety of public and private actors that may also straddle multiple institutional venues (Borzol, 1997; Adam & Kriesi, 2011).

Organizationally, these arrangements emerge in strained policymaking environments where the institutional systems of policymaking depend on outside resources in complex systems of resource-dependency. Politically, private organizations, because of their comparative advance in informational processes and "institutional agility" – the ability to easily pressure government actors in multiple venues – have become increasingly influential for the formulation and implementation of policies. In a structural context, "policy networks present themselves as a solution to co-ordination problems typical for modern societies" (Borzol, 1997, p. 5). Many, however, are concerned that such arrangements may allow too much influence over policy to private, non-democratic entities in ways that are harmful to a democratic citizenry and contradict ideals of equal access and voice (e.g., Ball, 2008).

Moving Beyond the Metaphor

Two decades ago, Keith Dowding (1995) challenged the emerging field of (PNA), which had become a dominant framework of analysis in the British political sciences and was becoming more popular in European and American literatures:

> "Policy network analysis began as a metaphor, and may only become a theory by developing along the lines of social network analysis…[T]he driving force of explanation, the independent variables, are not network characteristics *per se* but rather characteristics of components within the networks. These components explain both the nature of the network *and* the nature of the policy…Theory building in this case will be

> reductionist. In order to produce a *network* theory; where the properties of the network rather than the properties of its members drives explanation…" (p. 137)

Notable, Rhodes (2006) describes this as a "watershed" moment in the network literature that prompted a swarm of responses from policy network scholars, but many of Dowding's criticisms remain valid. Like Dowding, critiques of the policy network approach in general emphasize its theoretical limitations – after all theory should provide the roadmap for causal assumptions with empirically testable hypotheses. To this point, Kenis and Schneider (1991), note that network analysis is "no theory *in stricto senso*, but rather a tool box for describing and measuring relational configurations and their structural characteristics" (p. 44). Overall, the theoretical ambitions of the PNA field continue to outpace the empirical evidence for policy networks and their impacts on policy processes.

This essay speaks to reoccurring issues of theoretical coherence, core assumptions, and causal predictions by thoughtfully incorporating concepts from both interest intermediation and network governance models under a synthesis approach. Helpfully, Rhodes (2006) identifies policy networks as a 'meso-level' concept that "links the micro-level of analysis, dealing with the roles of interests and government in particular policy decisions, and the macro-level of analysis, which is concerned with broader questions about the distribution of power in modern society" (p. 426). Logically then, we argue that these definitions may both be subsumed under a synthesis theory of policy networks, where interest intermediation is a general concept that applies to *all types* of policy network structures, or relations, and network governance is a specific type of policy network structure characterized by specific forms of public-private relations. Moreover these "specific forms," which can be empirically verified using formal networking methods may have important implications for predicting policy dynamics that give rise to policy change.

Overall, PNA strongly conforms to the kind of integrated analytical framework described by John (2012). PNA emphasizes the role of government institutions, recognizing that asymmetrical power relationships exist between public officials that hold the formal authority to enact policy and those that do not. Governments, in turn, face pressure from a host of group and individual actors interested in influencing the policy agenda and/or the implementation process. PNA also recognizes the critical role of beliefs and ideas in policy environments.

The only one of John's elements that under-theorized in the policy networks literature is exogenous shocks – although Knoke (1990a) does include the impact of "events" on policy communities in his analysis of political network structures. Knoke (1990a) notes that the outcome of such "controversies" (i.e., winning or losing a political decision) depends on whether or not opposing sides can "draw on their network connections to mobilize and coordinate greater quantities of political resources to support their side of an issue controversy" (p. 137). Thus, policy networks are also a major mediator of exogenous shocks to the policy subsystem.

Towards an Integrated Policy Network Theory

Next, we elaborate on salient themes from these three theories in relation to policy network theory and analysis. Notably, all three of these models have significant hypotheses related to both ideas and networks.

Theory 1: The Advocacy Coalition Framework

The Advocacy Coalition Framework (ACF) argues that "advocacy coalitions" operate within a "policy subsystem." Subsystem participants with similar policy beliefs form advocacy coalitions comprised of:

> people from a variety of positions (elected and agency officials, interest group leaders, researchers, etc.) who share a particular belief system – for example, a set of basic values, causal assumptions, and problem perceptions – and who show a nontrivial degree of cooperation over time. (Sabatier, 1988, p. 139)

In policy networks, advocacy coalition theory articulates the mechanisms of group formation, or why certain policy participants choose to cooperate, while others do not. In network terms, this process can be interpreted as a selection activity, modeled as how likely policy actors are to interact with each other (e.g. Henry, 2011). Homophily – a central concept for analyzing social networks – introduces the idea of "we are who we friend." More formally, if two individuals have matching characteristics in greater that expected proportions in comparison to the rest of the network population, then they are more likely to form ties (Verbrugge, 1977, Kadushin, 2012). In policy networks, policy-related beliefs facilitate connections between actors in the same advocacy coalition (Henry et al., 2010). In Swiss energy politics, for example, Kriesi and Jegen (2001) find that two antagonistic "pro-ecology" and "pro-growth" coalitions form based on their policy beliefs. Interestingly, the authors also find that policy entrepreneurs and diverse policy beliefs within coalitions facilitated cooperation and negotiation between the opposing factions. It appears then that policy beliefs enable network ties both within and between advocacy coalition members.

ACF identifies three different categories, or more accurately "levels," of policy-related beliefs conceptualized as a "three-tiered hierarchal structure" (Sabatier & Weible, 2007, p. 194). The first, and broadest, level of beliefs is *deep core beliefs*. Deep core beliefs are normative in nature and extend

across policy subsystems. They include the prioritization of fundamental social and political values, such as the proper role of markets and government in society, which groups are most important, and who should be in charge of policymaking and implementation. The traditional right-left scale that identifies with conservative and liberal political ideologies operates at this level. Deep policy core beliefs are a product of childhood socialization and are very difficult to change (Sabatier & Weible, 2007).

The second level of beliefs is *policy core beliefs*, which are interpretations of deep core beliefs applied to whole policy subsystems. These include the relative importance of different policy-related values, whose welfare matters, and the proper functions of private entities and government authorities in policy matters. Policy core beliefs also shape how policy actors arbitrate the relative urgency of different policy problems within subsystems, as well as the fundamental causes of (and often the appropriate solutions for) those problems. Notably, Sabatier and Weible (2007) find that, "operationalizing two or three policy core beliefs is sufficient to identify at least two advocacy coalitions" (p. 195). They also, however, urge scholars to examine as many elements of policy core beliefs as possible because factions and subdivisions within coalitions, or the emergence of a third coalition, are often explained by disagreements over other issues related to policy core beliefs (Sabatier & Weible, 2007). Importantly, subsystem cleavages based on policy core beliefs are also apparent in scholarly applications of ACF in combination with PNA. Weible & Sabatier (2005), for example, find that policy core beliefs more accurately predict the formation of advocacy-oriented networks, including ally and coordination networks, than the formation of information-based networks, such as advise networks. Likewise, Henry (2011) finds policy core beliefs are stronger predictors of tie formation within collaboration networks than perceived influence. Interestingly, however, perceived influence was an important predictor of collaboration within ideologically based coalition.

At the same time, within subsystems groups members may be divided over approaches to time-specific, contextual policy reforms, such as advocacy coalitions formed for and against marine protected areas in environmental policy subsystems, or those for and against charter school expansion in educational policy subsystems (Kirst, 2007; Sabatier & Weible, 2005). Notable examples often make for "strange bedfellows" when ideological disparate groups agree on a particular policy solution. In education, for example, charter school coalitions are comprised of both free-market ideologues on the Right and progressive, civil rights groups on the Left (Kirst, 2007). Beliefs that fall under this umbrella make up the third level of beliefs: *policy core policy preferences*, or more simply, *policy preferences*. Policy preferences are beliefs that "(i) are subsystemwide in scope, (ii) are highly salient, and (iii) have been a major source of cleavage for some time" (Sabatier & Jenkins-Smith, 1999, p. 134).

Recent work in PNA scholarship demonstrates that policy preference also have strong potential as an organizing analytical unit for examining policy network structures and the exchange of information and resources within subsystems. In a study of regional land-use and transportation planning in four regions of California, Henry, Lubell, and McCoy (2010) operationalize seven belief scales that include a mix of policy core beliefs and policy preferences. Their findings indicate that some belief systems within the subsystem, including "economic conservatism" and environmentalism," are representative of deep core beliefs, while policy preferences, including "inclusiveness" and "Smart Growth" are more consistent with policy core beliefs. Significantly, the authors note that, "the beliefs driving polarization in the network tend to map onto the salient issues and conflicts faced in each region" – in other words, the local policy preferences (Henry et al., 2010, p. 22).

Theory 2: Policy Entrepreneur Models

Policy scholars have long recognized the influence of policy entrepreneurs as change agents in policymaking processes (Baumgartner & Jones, 1993; Kingdon, 1995; Mintrom, 2000; Mintrom & Vergari, 1996; Weissert, 1991). Policy entrepreneurs are individuals or corporate actors that attempt to strategically advance their policy agenda. Zahariadis (2007) notes that policy entrepreneurs are "more than mere advocates of particular solutions; they are power brokers and manipulators of problematic preferences and unclear technology" (p. 74). Thus, policy entrepreneurs may benefit from diffuse communication networks and uncoordinated policy advocacy, using their comparative institutional advantages to "fill in the gaps," which in turn gains them prestige as a policy innovator. When this prestige is coupled is with their institutional role, they may augment their power over policy agendas in powerful ways.

Mintrom and Vergari (1996) identify three functions of policy entrepreneurs. First, policy entrepreneurs "discover unfulfilled needs and suggest innovative means to satisfy them" (p. 422). Thus, policy entrepreneurs must be able to identify opportunities. Next, policy entrepreneurs frequently bear many of the risks (i.e., financial, reputational, emotional, etc.) involved in supporting innovative ideas. Third, they resolve collective action problems in for emerging policy agendas. They do so by acting as "boundary-spanners" that assemble and coordinate networks policy actors through across multiple institutional and subsystem contexts. In effect, they address the resource problems associated with "start-up" ideas, but strategically drawing on the resources and skills of these actors. Thus, successful policy entrepreneurs are those embedded in policy networks (Mintrom & Vergari, 1996).

Importantly, concepts of policy entrepreneurs as "brokers" and "bridgers" of policy information have strong precedent in the networks literature. Social capital theory – the conceptual foundation of social network analysis – asserts that mutual trust and commitment can often emanate from group norms, from frequent interaction, or both (Coleman, 1988; Putnam, 2000). Networks are critical to the

formation of social capital because they can strengthen ties between disparate actors that lead to norms of reciprocity and collective trust (Putnam, 2000) – a pattern that appears hold in policy networks (Henry et al, 2010). One of the central arguments of network theory – Granovetter's "strength of week ties" hypothesis (Granovetter, 1973) – suggests that individuals are often better off nurturing their relationship with acquaintances (or 'weak ties') rather than their friendships (or 'strong ties'). Because acquaintances serve as "bridgers" between disparate cliques within policy networks, weak ties constitute the primary means of information diffusion (Carpenter, Esterling, & Lazar, 1998). According to Robert Burt's theory of "structural holes" (1992) – a prominent theme in social network analysis – dense ties within networks create holes, limiting the interaction of actors in different clusters. Consequently, some network actors, referred to as "network brokers" (Burt, 2004), are able to take advantage of structural holes by bridging between the clusters.

Finally, policy network research suggests that loosely co-ordinated policy networks in "governance network" form may have a particularly important role in the early stages of policy change, or during the "agenda setting" phase (Kingdon, 1995), when policy entrepreneurs are especially active (Mintrom, 2000). During times of rapid policy change policy entrepreneurs take up a cause and reframe issues through policy issue networks (Kirst & Wirt, 2009). With regards to the mechanisms of this process, Kingdon (1995) claims that a shift in the makeup of actors in policy subsystems coupled with a significant external shock leads to the opening of a "policy window" for policy entrepreneurs to pioneer change. Focusing on linking individual entrepreneurial activity to broad-based collective action, Kingdon's (2003) multiple-streams theory makes some sense of 'great man' historical hypotheses: "Policy entrepreneurs do not control events or structures, but they can anticipate them and bend them to their purposes to some degree" (p. 225). In effect, they are the "ideational mechanisms of change" in policy networks.

Theory 3: Punctuated Equilibrium Theory

Punctuated Equilibrium Theory instead deals with broader signs of policy change – a process that can be observed by examining fluctuations between longer periods of policy stability, or "equilibriums," and relatively short periods of change, or "punctuations" (Baumgartner & Jones, 1993; 2002). Early on, PET focused on explaining sudden changes in the policy environment that could not be understood by only applying institutional models or models of collective action. Policy subsystems were more dynamic: "[P]olitical processes are generally characterized by stability and incrementalism, but occasionally they produced large scale departures from the past" (True et al., 2007, p. 155). Rooted in these explanations of subsystem stability and change, more recent refinements of PET have adopted more general approaches. They developed from a plethora of PET scholarship in the early 1990s that extended the original frame of analysis beyond studies of the "peculiar" American system it was designed for. In doing so, many new insights and hypotheses have emerged, prompting revisions that moved away from the "standard model" to a more general theory. Baumgartner and Jones (2012) have termed this new, broader understanding as the *general punctuation thesis.* For clarification, the general punctuation thesis incorporates the original features of PET into a more versatile model, so it is considered a modern iteration of PET, not a new theory.

Modern PET: The general punctuation thesis. In policy studies, PET applies to a specific situation in which stable subsystems are disrupted by sudden policy. True, Jones and Baumgartner outline three major conditions of the "standard model" (2007) of PET. First, political conflict is expanded beyond the confines of expert-dominated policy subsystems, sometimes referred to as "venue-switching." Second, policy images, or the way in which policy problems and solutions are understood, are the primary mechanisms of change. Third, policymaking exists in an overlapping system of partially

independent institutional venues. The general punctuation thesis generalizes this basic framework, focusing on how information is exchanged and filtered in policy subsystems:

> This more general approach emphasizes the role of the processing of information in a policymaking system. Informational processing involves collecting, assembling, interpreting, and prioritizing signals from the policy environment (Baumgartner & Jones, 2012, p. 7).

Approaches to information tend to focus on proprietary conceptions, where information is private and to some degree "privileged." Differently, the general approach to PET considers the great accessibility of information in most policy subsystems. Amidst the milieu of policy information in contemporary subsystems, how do policymakers decide which issues are important? Furthermore, once the most pressing issues have been identified, how do policymakers determine the best policy solutions to address those issues? This "selective attention process" has important implications for policy subsystems.

Institutionalized venues and bounded rational decision-making. Both past and modern accounts of PET overlap significantly with network theory in their emphasis on concepts of "bounded-rationality" and "rational actor-based decision-making." Bounded-rationality is a fundamental concept for explaining individual and collective decision-making in organizational and social network theory (Kadushin, 2012). In short, policy actors make decisions in an information-rich environment, but because of cognitive and institutional limitations they cannot devote attention to many policy issues at once – a phenomenon known as "serial processing," or as mentioned, "selective attention processing." Within policy subsystems, information is processed through institutional venues within a formal political system. In the case of U.S. institutions, the constitutional requirements of majority-based

legislative processes buttress naturally occurring organizational friction, accentuating the “slip-stick” nature of policy-making in American policymaking venues (Baumgartner & Jones, 2012).

Thus, subsystem actors rely on their embeddedness in informal policy networks and their participation in formal institutional venues for acquiring policy information and sorting through it. As members of policy networks, they rely on network ties to transmit and legitimize policy ideas and solutions, shaping policy outputs and outcomes, while also relying on institutional rules and norms to guide their decision-making. Put differently, they rely on informational signals from the policy environment, which is institutionally and epistemologically bounded, to make rational decisions. Next, I elaborate on some of the key differences between stable subsystems and those in the throws of dynamic policy change in terms of their network structure, network composition, network dynamics; external environment; and policy outcomes.

Negative feedback and subsystem stability: Rooted in natural science theory, a negative feedback system includes a homeostatic process or a self-correcting mechanism. The adjustment of body temperature in humans is a good example. Just as body temperatures adjust to outside conditions to maintain optimal conditions for key biological processes, homeostatic systems work to maintain stability. In policy contexts, this may be considered in tandem with Truman's (1951) "disturbance theory" explicating the impact of wide-ranging disturbances to the established order, such exogenous shocks. Pluralist political systems like the United States will “self-correct," adjusting to internal and external “shocks to the system” as stakeholder groups respond to external pressures (Truman, 1951; Baumgartner & Jones, 2012). In effect, major subsystem changes often have negative consequences for dominant stakeholders groups, resulting in counter-mobilizations to "set things right" (i.e., negative feedback) so subsystems rarely veer too far from "equilibrium" (True, Jones & Baumgartner, 2007).

Importantly, stability-reinforcing phenomena, such as bounded rationality, incrementalism, and institutional/organizational behavior, are generally characterized by negative feedback systems. In earlier PET work, Baumgartner and Jones (1993) emphasize the importance of "policy monopolies" in generating stable policy outcomes for very long periods of time. Ideas, or "images" and institutions, or "venues," play a critical role in supporting policy monopolies: "Where the institutional venues of decision-making are stable, and where a positive policy image supports a given policy, powerful negative feedback processes can operate, creating a strongly homeostatic system that generates stable policy outcomes for decades" (Baumgartner & Jones, 2012, p. 14). Institutional venues limit who can participate in policy discourse, while policy images support particular "idea sets" that shape how policymakers think about and discuss policy issues. This in turn results in the "serial processing" and/or "selective processing" of specific ideas and reforms in institutionalized venues that paint policy problems and solutions in very particular ways (in comparison to all the ways problems and solutions could be viewed).

Positive feedback and dynamic policy change: In contrast to negative feedback, positive feedback mechanisms include a self-reinforcing process that accentuates rather than counterbalances a new trend. Unlike predictable negative feedback that inhibits dramatic change, self-reinforcing positive informational processing can be explosive, fickle and erratic. Scholars have also noted the cyclical logic of positive feedback, which lead to "positive feedback loops" where the effects of a small disturbance on a system correspond with an increase in the magnitude of the perturbation. Audio feedback in radio systems is a familiar example of positive feedback. In this case, the microphone picks up sounds from its own speakers, amplifies and sends it through the speakers again, creating a high-pitched squealing sound. Likewise, in the social sciences, economists have characterized explosive "boom-and-bust" cycles as examples of positive feedback loops where initial success in a gaining market can make

additional gains come more easily. Unfortunately, as with audio feedback, positive feedback loops in social, political and economic systems “create and unstable system of cumulative advantages” (Bendor & Moe, 1985, p. 771). Studies of the spread of new technologies and innovative products, such as the QWERTY keyboard, the Windows operative system, and the iPhone have shown that when producers are able to establish a foothold in the market, the logics of positive feedback may lead to widespread market takeover. Relatedly, positive returns and economy “lock-ins” are important markers for creating system wide and/or industrial standards, which further reinforce existing trends (Arthur, 1994; Banerjee, 1992; David, 1985; Liebowitz & Margolis, 1999; Schelling 1978).

In policy contexts, positive feedback is associated with dynamic policy change where policy information/discourse is to some extent “trapped” in a positive feedback loop. Policy ideas become locked in and come to dominate policy subsystems, often destabilizing existing institutions and coalitions. Policy norms and industrial standards conform to new ideas and policymakers begin making choices based on what is “trendy” rather than making technically “correct” choices. In longitudinal policy studies, researchers have observed this kind of dynamic change in subsystems. Over very long periods of time considerable "clusterings" of unpredictable change that significantly deviate from stable conditions have occurred across various policy domains. A significant body of PET scholarship addresses the conditions under which stable policy subsystems are "punctuated" and undergo periods of rapid, dynamic policy change.

Modern iterations of PET theory draw attention to two processes in political systems broadly responsible for positive feedback: mimicking behavior and attention shifting. Mimicking, or “cue-taking” occurs when people observe the behavior of others and act accordingly. Mimicking is also a fundamental aspect of, “cascade, tipping-point, and critical mass models of political behavior” that “relies upon a certain level of collective behavior at which individual activity becomes self-sustaining

based upon perceived benefits of changing one's position" (Schrad, 2010, p. 64). Attention shifting, meanwhile, results from "serial processing" - the idea that humans can only attend to limited parts of the world at a time (Baumgartner & Jones, 2002).

Stable subsystems, sub-sector policy communities, and incremental change. According to PET, in stable subsystems, or those in "equilibrium", policy issues are attended to "in parallel," also known as "parallel processing" at the sub-sector level, with an established group of policy experts in that area dominating the policy-making process. In educational subsystems, for example, sub-sector domains range from athletics, counseling and facilities to curriculum, special education and teachers, from preschools and occupational schools to technology and transportation. In network terms, these may be thought of as "policy communities," which according Rhodes (2006, p. 427) display the following "ideal" network characteristics:

> "…a limited number of participants with some groups consciously excluded; frequent and high quality interaction between all members of the community on all matters related to the policy issues; consistency in values, membership and policy outcomes which persist over time; consensus, with the ideology, values and broad policy preferences shared by all participants; and exchange relationships based on all members of the policy community controlling some resources"

In technical language, "subgroup" or "clique" identification and actor ties that transmit policy-oriented information should be relatively stable over time (t_1, t_2, t_3, etc.). In this scenario, the informational signals can be categorized in terms of advocacy coalition beliefs, which model levels of beliefs in relation to policy actor interactions and subsystem dynamics (see above).

Thus, in stable subsystems informational signals about *deep policy core beliefs* and *policy preferences* will also be relatively stable, resulting in a collaborative policy environment where policy

actors bargain over resources and power within the policy community. When conflict does occur, it will be over *secondary policy beliefs* that focus on the technical and procedural elements of policy – the minor details, in other words, and not the "big picture stuff." Policy change will be incremental and predictable and based primarily on organizational and policy-oriented learning, where policy actors adapt to shared knowledge accumulation, gradually adopting new beliefs and practices within institutions and member organizations (Bennett & Howlett, 1992; True et al., 2007). Put differently, the focus of policy change will be on incremental refinements of preexisting policies. Moreover, the structures of the participating groups will likely be hierarchal and institutionally legitimized to some degree so leaders can exercise authority over their members and organize complex resource allocations efficiently. Broadly speaking, this corresponds with early concepts of policy monopolies and modern understandings of positive feedback in policy contexts.

Exogenous shocks, issue networks and dynamic policy change. Above all, the PET model – both new and old – is a model for understanding rapid and dynamic policy changes, or "punctuations," in the policy environment. Like the institutional approach, the policy network approach has traditionally been constrained by the "static" nature of networks. While the stable policy network environment described above has great analytical value for understanding a wide range of policymaking activities and policy outcomes during periods of subsystem stability (i.e., "equilibrium") – which is most of the time – there is little explanatory power for punctuations, or periods of dynamic policy change. PET was designed as a critique of the notion that policies and agendas simply continue over time, changing gradually in response to the world around them. PET focuses, instead, on how policy subsystems transition during periods of dynamic change. Importantly, one of the major ways dynamic change is prompted, particularly given the rise of ideational politics over the past several decades, is when subsystem ideas and beliefs about policy problems and solutions are significantly altered – a

phenomenon that can be conceptualized as changes in “informational signals” being fed into the subsystem (Baumgartner & Jones, 2012).

Policy actors will typically present policy information in “idea sets” or “policy images” that bundle together the answers to these key questions. Policy entrepreneurs are particularly skilled at packaging policies by linking clearly defined policy problems with particular solutions. During periods of dynamic policy change policy entrepreneurs may bridge institutional arrangements by brokering informational processes through diffuse issue networks that likely includes many new actors to the subsystem. It is also worth noting that policy entrepreneurs will be more successful under certain institutional conditions, and they will strategically target state subsystems based on these conditions (Zahariadis, 2007). Thus, by observing the changes in the network structures in terms of the location and number of policy entrepreneurs, the number of new actors, changing network dynamics and the density if the network periods of dynamic policy change may be observed using PNA in concert with PET theory, the ACF and PEM.

Conclusion

We have argued that Policy Network Analysis (PNA) has great potential as an integrated theoretical framework for understanding policymaking processes, both during periods of relative stability and during periods of dynamic change. We have shown the conceptual compatibility of PNA with established theories of policymaking – the Advocacy Coalition Framework (ACF), the Policy Entrepreneur Model (PEM), and Punctuated Equilibrium theory (PET) – for explicating periods of relative stability, as well as periods of dynamic change in policy subsystems.

The ACF, PEM and PET make different contributions to our understanding of policy networks and policy change, yet there is a high degree of overlap in the way these models treat these phenomena. Based on our discussion of these processes, there is at least two key ways that PNA can incorporate insights from these three theories to gain increased explanatory power in a multi-theoretical framework.

First, PNA could be improved by incorporating insights from ACF and PEM on how coalitions form, as well as how power dynamics influence individual and group behavior. ACF establishes useful guidelines for identifying important network structures within policy subsystems. Moreover, the range of policy beliefs that can be operationalized with ACF can be utilized gaining for fine-grained analysis of subsystem dynamics. For example, researchers can identify what policies actors organize around to form advocacy coalitions, but also if there are any important subgroups, or "cliques" within those coalitions. Meanwhile, the PEM can identify power structures and informational exchange structures and point to key individuals within policy networks. Taken with concepts of networks brokering, the PEM can explicate the behavior of particular individuals, as well as their potential impact on policy change, based on their network locations. Policy entrepreneurs, for example, are more likely to fill structural holes in policy networks and bridge both *within* and *between* coalitions – a proposition that can easily be tested using formal networking techniques.

Second, PNA could benefit by including insights from the PEM and PET theory on how dynamic policy change occurs. Both the PEM and PET theory clarify how new policy ideas make their way onto the policy agenda, sometimes prompting periods of dynamic policy change. These patterns can be identified and analyzed using PNA. Significantly, recent innovations in network methodologies facilitate the study of dynamic network change over time (Snijders, van de Bunt, & Steglich, 2010). Using these techniques, researchers can identify how network structures and individual actors (i.e. policy entrepreneurs) within those network structures evolve over time. For example, the presence of many

active policy entrepreneurs embedded in a diffuse policy network with diverse public and a private actor is associated with the presence of an issue network and the early stages of policy change. In this case, changing network metrics over time, such as network centrality, density and membership can be used as indicators of shifts in the policy environment.

We have explicated the complementary nature of PNA with other theories of the policy process by exploring ways that the ACF, the PEM and PET each provides a deeper understanding of subsystem dynamics and policy change. If multi-theoretical frameworks are used to synthesize concepts across theories, as we do here, this should result in richer analysis of policymaking processes than any single theory can provide alone. PNA presents a unique way to bring concepts from key theories together that should prove useful to many policy researchers.

References

Adam, S., & Kriesi, H. (2007). The network approach. In P. A. Sabatier (Ed.), *Theories of the policy process* (2 ed., pp. 129-154). Boulder, CO: Westview Press.

Ansell, C. (2000). The networks polity: Regional development in Western Europe. *Governance, 13*(3), 303-333.

Arthur, W. B. (1994). *Increasing returns and path dependence in economy*. Ann Arbor: University of Michigan Press.

Atkinson, M., & Coleman, W. D. (1985). Corporatism and industrial policy. In A. Clawson (Ed.), *Organized interests and the state: Studies in meso-corporatism* (pp. 22-45). London: Sage.

Atkinson, M., & Coleman, W. D. (1989). Strong states and weak states: Sectoral policy networks in advanced capitalist economies. *British Journal of Political Science, 19*(1), 47-67.

Ball, S. J. (2008). New philanthropy, new networks and new governance in education. *Political Studies, 56*, 747-765.

Ball, S. J. (2009). Privatising education, privatising education policy, privitising education research: network governance and the 'competition state'. *Journal of Education Policy, 24*(1), 83-99.

Banerjee, A. V. (1992). A simple model of hard behavior. *The Quarterly Journal of Economics, 107*(3), 797-817.

Baumgartner, F. R., & Jones, B. D. (1991). Agenda dynamics and policy subsystems. *Journal of Politics, 53*(4), 1044-1074.

Baumgartner, F. R., & Jones, B. D. (1993). *Agendas and instability in American politics*. Chicago: University of Chicago Press.

Baumgartner, F. R., & Jones, B. D. (2012). From there to here: Punctuated equilibrium to the general punctuation thesis to a theory of government information processing. *The Policy Studies Journal, 40*(1), 1-19.

Bender, J., & Moe, T. M. (1985). An adaptive model of bureaucratic politics. *The American Political*

Science Review, 79(3), 755-774.
Bennett, C. J., & Howlett, M. (1992). The lessons of learning: Reconciling theories of policy learning and policy change. *Policy Sciences, 25*(3), 275-294.
Berry, J. M. (1984). *The interest group society*. Boston: Little Brown.
Boase, J. P. (1996). Institutions, institutionalized networks and policy choices: Health policy in the US and Canada. *Governance, 9*(3), 287-310.
Borzol, T. (1997). What's so special about policy networks - An exploration of the concept and its usefulness in studying European governance. *European Integration online Papers, 1*. http://eiop.or.at/eiop/texte/1997-016a.htm
Burt, R. S. (1992). *Structural holes: The structure of competition*. Cambridge, MA: Harvard University Press.
Burt, R. S. (2004). *Brokerage and closure: An introduction to social capital*. Oxford, UK: Oxford University Press.
Cairney, P. (2012). *Understanding public policy: Theories and issues*. Basignstoke, UK: Palgrave.
Cairney, P. (2013). Standing on the shoulders of giants: How do we combine the insights of multiple theories in public policy studies? . *Policy Studies Journal, 41*(1), 1-22.
Carpenter, D. P., Esterling, K. M., & Lazer, D. (1998). The strength of weak ties in lobbying networks: Evidence from healthcare politics. *Journal of Theoretical Politics, 10*, 417-444.
Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology 94*, S95-S120.
David, P. A. (1985). Clio and the economics of QWERTY. *American Economic Review, 75*(2), 332-337.
Dowding, K. (1995). Model or metaphor? A critical review of the policy network approach. *Political Studies, 43*(1), 136-158.
Frank, K. A., Chen, I.-C., Lee, Y., Kalafatis, S., Chen, T., Lo, Y.-J., & Lems, M. C. (2012). Network location and policy-oriented behavior: An analysis of two-mode networks of coauthored documents concerning climate change in the Great Lakes region. *Policy Studies Journal, 40*(3), 492-515.
Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360-1380.
Hanf, K., & O'Toole, L. J. (1992). Revisiting old friends: networks, implementation structures and the management of inter-organizational relations. *European Journal of Political Research, 21*(1/2), 163-180.
Heclo, H. (1978). Issue networks and the executive establishment. In A. King (Ed.), *The new American political system*. Washington DC: American Enterprise Institute.
Henry, A. D. (2011). Ideology, power, and the structure of policy networks. *Policy Studies Journal, 39*(3), 361-383.
Henry, A. D. (2012). *Social networks, collaborative institutions, and learning for sustainable regional planning*. Paper presented at the Design and Dynamics of Institutions for Collective Action Conference, The Netherlands.
Henry, A. D., Lubell, M., & McCoy, M. (2010). Belief systems and social capital as drivers of policy network structure: The case of California regional planning. *Journal of Public Administration Research and Theory, 21*(3), 419-444.
Howlett, M. (2002). Do networks matter? Linking policy network structure to policy outcomes: Evidence from four Canadian policy sectors 1990-2000. *Canadian Journal of Political Science, 35*(2), 235-267.
John, P. (1998). *Analysing public policy*. London: Continuum.
John, P. (2003). Is there life after policy streams, advocacy coalitions, and punctuations? *The Policy*

Studies Journal, 31(4), 481-498.
John, P. (2012). *Analyzing public policy*. London: Routledge.
Jordan, G., & Schubert, K. (1992). A preliminary ordering of policy network labels. *European Journal of Political Research, 21*(1/2), 7-27.
Kadushin, C. (2012). *Understanding social networks: Theories, concepts, and findings*. New York, NY: Oxford University Press.
Kenis, P., & Raab, J. (2003). *Wanted: A good theory of policy making*. Paper presented at the National Public Management Conference, Washington D.C.
Kenis, P., & Schneider, V. (1991). Policy networks and policy analysis: Scrutinizing a new analytical toolbox. In B. Martin & R. Mayntz (Eds.), *Policy networks: Empirical evidence and theoretical considerations* (pp. 25-59). New York: Westview Press.
Kingdon, J. W. (1984). *Agendas, alternatives, and public policies*. Boston: Little, Brown.
Kingdon, J. W. (1995). *Agendas, alternatives, and public policies* (2 ed.). New York, NY: HarperCollins.
Kingdon, J. W. (2003). *Agendas, alternatives, and public policies*. New York: Longman.
Kirst, M. (2007). Politics of charter schools: Competing national advocacy coalitions meet local politics. *Peabody Journal of Education, 82*(2-3), 184-203.
Kirst, M., & Wirt, F. (2009). *The political dynamics of American education* (4 ed.). New York: Teachers College Press.
Knoke, D. (1990a). *Political networks: The structural perspective* (Vol. Cambridge University Press): New York, NY.
Knoke, D. (1990b). Networks of political action: Toward theory construction. *Social Forces, 68*(4), 1041-1063.
Knoke, D., Pappi, F. U., Broadbent, J., & Tsujinaka, Y. (1996). *Comparing policy networks: Labor politics in the U.S., Germany, and Japan*. New York, NY: Cambridge University Press.
Kriesi, H., & Jegen, M. (2001). The Swiss energy policy elite: The actor constellation of a policy domain in transition. *European Journal of Political Research, 39*(2), 251-287.
Laumann, E. O., & Knoke, D. (1987). *The organizational state*. Madison, WI: University of Wisconsin Press.
Leifeld, P., & Schneider, V. (2012). Information exchange in policy networks. *American Journal of Political Science, 56*(3), 731-744.
Liebowitz, S. J., & Margolis, S. E. (1999). *Winners, losers & Microsoft: Competition and antitrust in high technology*. Oakland: The Independent Institute.
Mintrom, M. (2000). *Policy entrepreneurs and school choice*. Washington DC: Georgetown University Press.
Mintrom, M., & Vergari, S. (1996). Advocacy coalitions, policy entrepreneurs, and policy change. *Policy Studies Journal, 24*(3), 420-434.
Peterson, J. (2003). Policy networks *IHS Political Science Series*. Vienna: Institute for Advanced Studies.
Pfetsch, F. R. (1998). Negotiating the European Union: a negotiation-network approach. *International Negotiation, 3*(293-317).
PolNET. (2014). 7th annual political networks workshops and conferences. from http://polnet2014.cs.mcgill.ca/presentation.php
Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.
Rhodes, R. A. W. (1988). *Beyond Westminster and Whitehall*. London: Unwin-Hyman.

Rhodes, R. A. W. (1999). *Control and power in central-local government relationships*. Buckingham: Open University Press.

Rhodes, R. A. W. (2006). Policy network analysis. In M. Moran, M. Rein & R. E. Goodin (Eds.), *The Oxford handbook of public policy* (pp. 425-447). New York: Oxford University Press.

Rhodes, R. A. W., & Marsh, D. (1992). *Policy networks in British politics*. Oxford: Oxford University Press.

Sabatier, P. A. (1988). An advocacy coalition framework of policy change and the role of policy-oriented learning therein. *Policy Sciences, 21*(29-168).

Sabatier, P. A., & Jenkins-Smith, H. C. (1993). *Policy change and learning: An advocacy coalition approach*. Boulder, CO: Westview Press.

Sabatier, P. A., & Jenkins-Smith, H. C. (1999). The advocacy coalition framework: An assessment. In P. A. Sabatier (Ed.), *Theories of the Policy Process* (pp. 117-166). Boulder, CO: Westview Press.

Sabatier, P. A., & Weible, C. M. (2005). Comparing policy networks: Marine protected areas in California. *The Policy Studies Journal, 33*(2), 181-201.

Sabatier, P. A., & Weible, C. M. (2007). The advocacy coalition framework. In P. A. Sabatier (Ed.), *Theories of the policy process* Boulder, CO: Westview Press.

Schelling, T. C. (1978). *Micromotives and macrobehavior*. Cambridge, MA: Harvard University Press.

Schmitter, P. C. (1979). Still the century of corporatism? In P. C. Schmitter & G. Lehmbruch (Eds.), *Trends toward corporatist intermediation* (pp. 7-52). Beverly Hills, CA: Sage Publications.

Schrad, M. L. (2010). *The political power of bad ideas: Networks, institutions, and the global prohibition wave*. New York, NY: Oxford University Press.

Snijders, T. A. B., Bunt, G. D. v. d., & Steglich, C. E. G. (2010). Introduction to actor-based models for network dynamics. *Social Networks, 32*(1), 44-60.

True, J. L., Jones, B. D., & Baumgartner, F. R. (2007). Punctuated-equilibrium theory: Explaining stability and change in public policymaking. In P. A. Sabatier (Ed.), *Theories of the policy process* (2 ed., pp. 155-188). Boulder, Colorado: Westview Press.

Truman, D. (1951). *Governmental processes*. New York, NY: Alfred A. Knopf, Inc.

Verbrugge, L. (1977). The structure of adult friendship choices. *Social Forces, 56*, 576-597.

Walker, J. L. (1983). The origin and maintenance of interest groups in America: Interest groups, patrons and representation. *American Political Science Review, 77*, 390-406.

Weissert, C. S. (1991). Policy Entrepreneurs, policy opportunities, and legislative effectiveness. *American Politics Research, 19*(2), 262-274.

Zahariadis, N. (2007). The multiple streams framework: Structure, limitations, prospects. In P. A. Sabatier (Ed.), *Theories of the policy process* (pp. 65-92). Boulder, CO: Westview Press.