Gordian Knot or Integrated Theory? Critical Conceptual Considerations for Governance Network Analysis[1]

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ABSTRACT

In recent decades, theorists and researchers have begun to shift emphasis away from the analysis and descriptions of government roles and responsibilities to processes of governance unfolding amidst complex networks of individuals, organizations and institutions. Observing this trend, George Frederickson observes that the current status of theory development of network governance is "neither theoretically tidy nor parsimonious," and "at this point there isn't a single theory that puts its arms around third party governance" (Frederickson, 2007, p. 11). Despite efforts to define critical characteristics of "policy subsystems," "policy networks," "public management networks," and "governance networks," we are left to conclude that the development of a theoretical framework through which to describe, evaluate and analyze governance networks is a particularly ambitious undertaking, possessing several kinds of "Gordian knot" dilemmas. In this chapter, the authors frame these challenges in terms of questions concerning the differentiation of macro-level forms (markets, hierarchies and networks), accounting for the possibilities of mixed administrative authorities (combinations of vertical and horizontal relations), multi-sector relationships, and multiple policy functions, and challenges associated with mixed social scales. The current ambiguities around these questions are explored and related propositions for addressing each is offered.

'Turn him to any cause of policy, The Gordian Knot of it he will unloose,
Familiar as his garter' ....
Shakespeare, Henry V, Act 1 Scene 1. Lines 45-47

INTRODUCTION

The expansion of information technologies, the increasing complexity and "wickedness" of public problems, the moves to contract out, privatize, and partner have fueled interest in the application of network frameworks to the study of public administration, public policy, and governance structures (Rhodes, 1997; Kickert et al., 1997; Koppenjan and Klijn, 2004; Goldsmith and Eggers, 2004; Klijn and Skelcher, 2007; Sorensen and Torfing, 2008). These trends have led to innovations in governing. There is growing evidence to suggest that these trends have and will continue to shape inter-jurisdictional landscapes, and represent new kinds of reform with regard to how government interacts with for profit and not for profit organizations in the design and delivery of public policy.

We proposed that the network turn in public administration and policy that we discuss here poses a metaphorical "Gordian knot" for the field. The mythical Gordian knot has no perceivable beginning or end, with no obvious ways of entering or existing it. Its circularity defies rational linear explication and logic. We discuss how the development of an integrated theory of governance networks appears, at this juncture, to pose a Gordian knot dilemma because of some seemingly incommensurate paradigms of what constitutes a network, insufficient development of network administration frameworks, and a variety of multi-scale asymmetries that constrain the easy comparison of governance networks of similar structure and function. What follows is a review of the literature that interprets the emergence of governance structures and the identification of "gaps" or critical questions that needs attention in the development of a more comprehensive understanding of governance networks. We then provide propositions to address these questions that can assist the development of governance network theory. Sections of this chapter have been excerpted from several chapters of the authors' book, *Governance Networks in Public Administration and Public Policy*.[2]

INTERPRETING THE EMERGENCE OF GOVERNANCE STRUCTURES

There have been many explicit efforts to employ network concepts to the study of complex social structures that arise when public policies are made, implemented and monitored. Hugh Heclo (1978) is credited with first applying the term "network" to the study of public policy and administration with his introduction of "issue networks" (Rhodes, 1997). Heclo presented the issue network concept in reaction to what he found was the more restrictive (and less pervasive) "iron triangles" – the relatively closed networks of government agencies, legislative committees, and interest groups.

Inter-organizational networks have been implicated in descriptions of policy or government "subsystems" (Baumgartner and Jones, 1993). The Advocacy Coalition Framework (ACP) (Sabatier and Jenkins-Smith

1993), policy coalition (March and Olsen, 1995), and policy network (Rhodes, 1997; Kikert et al., 1997; Koppenjan and Klijn, 2004) literatures in particular have employed elements of systems dynamics and exchange theory to the study of inter-organizational network configurations. We also find inter-organizational networks described across much of the policy implementation (Gage and Mandell, 1990; O'Toole, 1997; Hill and Hupe, 2002), intergovernmental relations (Wright, 2000), collective action (Ostrom, 1990), and policy tools literatures (Salamon, 2002). Inter-organizational networks have also been described as third party government (Salamon, 2002; Frederickson and Frederickson, 2006), public sector networks (Agranoff, 2005), governance networks (Sorensen and Torfing, 2005, 2008; Bogason and Musson, 2006; Klijn and Skelcher, 2007), cross-sector collaborations (Bryson, Crosby and Stone, 2006), public management networks (Milward and Provan, 2006; Frederickson and Frederickson, 2006; Agranoff, 2007), and certain kinds of strategic alliances (Wohlstetter et al., 2005).

Inter-organizational networks have also been described in terms of the functions that they perform, whether it be service contracts, supply chains, ad hoc, channel partnerships, information dissemination, civic switchboards (Goldsmith and Eggers, 2004), problem-solving, information sharing, capacity building and service delivery (Milward and Provan, 2006), learning and knowledge transfer (McNabb, 2007), or civic engagement (Yang and Bergrud, 2008). Descriptions of inter-organizational networks have also been described as existing across many policy domains including social service delivery (Provan and Milward, 1995; Milward and Provan, 1998), land use planning (Koontz et al., 2004), watershed management (Leach and Pelkey, 2001; Leach, Pelkey and Sabatier, 2002; Imperial, 2005), health care (Frederickson and Frederickson, 2007; Rodreguez, et al., 2007), transportation (Albert et al., 2006), emergency management (Comfort 2002; Kapucu, 2006), community economic development (Agranoff and McGuire, 2003), and food systems (Sporleder and Moss, 2002; Smith, 2007; Jarosz, 2004). In addition to these uses of network metaphors and tools of analysis, particular types of network configurations have been described in the literature, including interest-group coalitions (Hula, 1999;), regulatory subsystems (Krause, 1997), grants and contract agreements (Kelman, 2002; Cooper, 2003; Goldsmith and Eggers, 2004), and public-private partnerships (O'Toole, 1997; Linder and Rousenau, 2000; Bovaird, 2005).

Having performed an extensive analysis of the literature relating to inter-organizational networks, Provan, Fish and Sydow conclude that, "… no single grand theory of networks exist…" (2007). The inter-organizational networks described in the public administration and policy studies literatures are often of such complexity that it is difficult for one single theory to account for all possible variables and combinations of variables. George Frederickson observes that the current phase of theory development is "neither theoretically tidy nor parsimonious," and "at this point there isn't a single theory that puts its arms around third party governance" (Frederickson, 2007, p. 11). There have been several noteworthy efforts offering typologies that define the critical characteristics of network governance (including Rhodes, 1997; Kickert, et al., 1997; Agranoff and McGuire, 2003; Mandell and Steelman, 2003; Koppenjan and Klijn, 2004; Sorensen and Torfing, 2005; Milward and Provan, 2006; Frederickson and Frederickson, 2006; Agranoff, 2007; Provan and Kenis, 2007;

Sorensen and Torfing, 2008). Across this literature we may draw several conclusions:

- Networks facilitate the **coordination of actions** and/or **exchange of resources** between actors within the network;

- Network membership can be drawn from some combination of **public, private and non-profit sector actors**[3];

- Networks may carry out one or more **policy function**;

- Networks exist across virtually all **policy domains**;

- Although networks are mostly defined at the inter-organizational level, they are also described in the context of the **individuals, groups *and* organizations** that comprise them;

- Networks form as the result of the selection of particular **policy tools**;

- Network structures allow for **government agencies to serve in roles other than lead organizations**[4].

Drawing from a synthesis of this literature, we define the governance network as a unit of analysis that possesses a relatively stable pattern of coordinated action and resource exchanges occurring between two or more organizations; involving policy actors crossing different social scales, drawn from the public, private or non-profit sectors and across geographic levels; who interact through a variety of competitive, command and control, cooperative, and negotiated arrangements; for purposes anchored in one or more facets of the policy stream (Koliba, Meek and Zia, 2010). We find these configurations documented across virtually every policy domain (Baumgartner and Jones, 2003).

If the inter-organizational governance network is to be advanced as the unit of analysis –and ultimately evolve into a comparative, transdisciplinary effort to advance theory, research and practice –several methodological and conceptual dilemmas need to be addressed. We frame these conceptual challenges below as critical questions to guide governance network analysis and we offer six propositions that will guide future research and theory development pertaining to mixed form governance networks:

1. **Macro-level Forms:** Are hierarchies and markets forms of networks, or should networks be considered as distinct from them?

2. **Administrative Authority:** How do we account for mixed (vertical & horizontal) administrative ties in networks?

3. **Sectoral Composition:** How do we account for multi-sector arrangements in networks?

4. **Policy Functions:** How do we account for networks taking on functions related to multiple policy streams?

5. **Social Scale:** How do we account for actors of mixed social scale operating within a network?

Why should we be concerned about developing a conceptual framework to describe and analyze governance networks? Why should we seek to unravel this Gordian knot? Ultimately, the systemic examination of the governance network as an empirical construct will lead to certain utilities for practitioners, citizen groups, and educators. That governance networks proliferate virtually "everywhere" (Sorensen and Torfing, 2005), should be cause enough to warrant the mounting of such a research enterprise. By advancing governance net-

works as a unit of analysis, generalizations regarding the interplay of network variables may be rendered. Ultimately, these generalizations should yield insights into the design, administration and monitoring of governance network activity. Issues of democracy, accountability and fairness in network governance may also be proposed as important meta-criteria for developing theoretical frameworks.

PROPOSITIONS TO GUIDE INTEGRATED-THEORY DEVELOPMENT

Any attempt to synthesize the growing literature pertaining to governance networks into an integrated theory of governance networks requires that attention be paid to the conceptual gaps that may persist across the range of network literature found in the public administration and policy studies fields. We attempt to address these apparent gaps by rendering a series of propositions that can be used to develop an integrated theory of governance networks. We frame these challenges in terms of questions concerning the differentiation of macro-level forms (markets, hierarchies and networks), accounting for the possibilities of mixed administrative authorities (combinations of vertical and horizontal relations), multi-sector relationships, and multiple policy functions, and challenges associated with mixed social scales. The current ambiguities around these questions are explored.

1. Differentiation of Macro-Level Forms

Proposition 1.1: Governance networks may be comprised of hierarchical, market and collaborative structures.
Proposition 1.2: Governance networks are shaped, in part, by the organizational structures that individual actors bring to the network.

At the cross-institutional level, inter-organizational arrangements are often referred to as "networks" and have been discussed as a third kind of organizational form in comparison to two existing forms: "hierarchies" and "markets." Two schools of thought exist regarding the comparisons among these organizational forms. The first is adhered to by those who have introduced network analysis to public administration (O'Toole, 1997; Goldsmith and Eggers, 2004; Provan, Fish and Sydow, 2007; Provan and Kenis, 2007; Sorensen and Torfing, 2008), and posits that hierarchies, markets and networks are distinct organizational forms from one another. Because much of traditional social network analysis has emphasized the role of horizontal ties, the network gets introduced as its own form of macro-level social structure along side of hierarchies and markets. In this view, networks are akin to collaborative arrangements or partnerships. Proponents of the hierarchy, market, and network model often view macro-level networks as relatively recent governance phenomena built around the establishment of cooperative ties.

A second view posits that markets and hierarchies are variations of network form. In this view, "Markets and hierarchies are simply two pure types of organization that can be represented with the basic network analytic constructs of nodes and ties (Laumann, 1991)" (Podolny and Page, 1998, p.58). "From a purely structural perspective," this view considers that, "the trichotomy among market, hierarchy, and network forms of organization is a false one" (Podolny and Page, 1998, p.58). In both natural and social networks "clustering" of nodes tends to take

Table 2: Macro-Level Network Forms

	Market	**Hierarchy**	**Collaborative**
Relational Tie	Competitive	Command and Control	Collaborative and Cooperative
Public Administration Paradigm	New Public Management	Classical Public Administration	Collaborative Public Management
Institutional Frame	Businesses/ Corporations	Public Bureaucracy	Partnerships; Coalitions

Source: modified from Powell, 1990 and Grimshaw et al., 2005

place. Ravasz and Barabiasi have noted how these clusters may be described in terms of hierarchical structures, suggesting that hierarchy is an inherent phenomenon of network structures (2003). In addition, the notion of the "network organization" (Borgatti and Foster, 2003) has been advanced, suggesting that network dynamics exist within any form of social organization. Writing about the relationship between hierarchies and networks, Frederickson and Frederickson observe, "It is not so much that networks have replaced hierarchies but more that standard hierarchical arrays, or parts of them, have often been enmeshed in lattices of complex networks arrangements (O'Toole, 2000; Agranoff and McGuire, 2001)" (Frederickson and Frederickson, 2006, p.12).

Markets have been widely recognized as networks of buyers and sellers, arranged in their own lattice work of marketing, sales, manufacturing, and service functions. The basic buyer-seller dyad is based on laws governing economic activity and norms associated with buyer preference and taste. Classical economic theory is built on assumptions about the relationship between buyers and sellers, as well as between competitors. As maximizers of their personal utility, market sellers compete for their market share. Buyers and sellers need to cooperate with one another in order to engage in an exchange of goods and services. In an attempt to get the best value or maximize profit, each actor in the network may engage in negotiation and bargaining.

In order to represent markets and hierarchies as variations of network forms, and still account for the existence of cooperative ties, we may distinguish between markets, hierarchies and "collaboratives," with the latter being inter-organizational network structures that rely on norms of trust and reciprocity. For a summary of the characteristics of the three forms of macro structures discussed, see Table 2. Collaborative structures emerging within the policy stream have been described as public-private partnerships (Linder and Rosenau, 2000; Bovaird, 2005), strategic alliances (Wohlstetter, Smith, and Malloy, 2005), cross-sector collaborations (Bryson, Crosby and Stone, 2006), and interest-group coalitions (Hula, 1999) in the literature.

We argue, however, that most inter-organizational network structures take on characteristics of all three macro level forms, suggesting that these hybridized or "mixed-form" network structures are shaped in part by the organizational structures that individual actors bring to the network. If for-profit firms participate in an inter-organizational network, they bring facets of the market structures to which they belong to the network. Their engagement in public-private partnerships, regulatory subsystems, or grants and contract agreements is

carried out with one proverbial eye over their shoulder, judging their participation, in part, on the impacts that their involvements have on fostering their own competitive advantage. The potential impact that network-wide actions have on the participating firm's economic standing is often an important consideration guiding network-wide actions.

If public sector organizations such as government agencies formally participate in inter-organizational network, they bring with them elements of their bureaucratic, hierarchical structure. Official public agency participation is often predicated on the will and desires of the agencies' principals, be they elected chief executive officers, their political appointees, or supervisors imbued with the authority to dictate the agencies' scope and type of involvement. Those who distinguish governance networks from markets and hierarchies fail to take into account the influence that the market and hierarchical structures of the participating organizations and institutions play in the structures and functions of the network itself. At the meso and micro levels, these mixed ties surface as distinctions between vertical, horizontal and competitive ties.

Although many governance networks get shaped, in part, by the organizational structures of the actors that comprise them, we suggest that all governance networks possess, to one degree or another, certain collaborative characteristics. The collaborative as a third form of network is introduced here as a value-neutral construct. As network accountabilities and performance get considered, the question: "collaboration to what end?" may be asked. Cautioning against viewing collaboration as a panacea for solving complex public problems, Bardach suggests that we should, "not want to oversell the benefits of interagency collaboration. The political struggle to develop collaborative capacity can be time consuming and divisive. But even if no such struggle were to ensue, the benefits of collaboration are necessarily limited (Bardach, 1998, p.311). We must be able to take into account that collaborations and partnerships may be an ineffective means for delivering public policy outcomes. Collaboratives can be undertaken in closed networks, leading in their worst cases to collusion. The social capital derived through horizontal ties may support "dark networks" (Raab and Milward, 2003) that exist to do social harms. We also need to be able to take into account collaborations that are carried out without sufficient democratic anchorage (Sorensen and Torfing, 2005), and develop the means to ascertain the degree of democratic anchorage that exists within any given governance network.

We conclude that by allowing for the possibility that network forms take on characteristics of some combination of market, hierarchical and collaborative arrangements, we can begin to recognize the trade-offs and opportunities that occur when one form of administrative authority is compared to, contrasted against, and combined with one another.

2. Mixed Administrative Authorities

Proposition 2.0: There will be asymmetrical allocations of material and immaterial resources and power among the network actors. Such allocations influence the structure of administrative authority of the network.

Governance networks have been described as taking on certain configurations of administrative authority that shape the flow of power between them. Robert Agranoff and Michael McGuire's studies of community de-

velopment networks highlight the role that vertical and horizontal relationships play within them (2003). They observe that, "A public manager may be involved in managing across governmental boundaries within the context of one program or project, while simultaneously managing across organizational and sector boundaries within the context of another program or project" (p.21).

Conceptual frameworks designed to analyze social power dynamics are abundant, and can be found across the literatures of virtually every social science. Of particular interest to us here are the kinds of conceptual frameworks that describe the flow of administrative power and authority within or across organizations. Drawing on theories of social exchange (Rhodes, 1997) and the definitions of administrative power as discussed across classical public administration, management and organizational development studies, power is viewed as being predicated on the coordination of the flow of resources that get exchanged across network partners (nodes). This is particularly true when one node controls the flow of resources (be it funding, information, etc.) to other actors within the network. Examples of vertical resource control date back to Weber's first introduction of bureaucratic theory, where we find considerations of power being explored as a matter of supervisor-subordinate relations. Classical organization development theory, found in the works of Gulick and Urwick (1937), and later the works of Simon (1946) and others, establishes the basis for describing the "command and control" structures of bureaucracies. More recently, principal-agent theory has emerged from economics and studies of contractual arrangements to provide a picture of vertical relations as they exist in social networks (Milward and Provan, 1998).

In regard to shared power or horizontal resource control and relations, there is growing body of literature that explores the nature of power in terms of the voluntary bonds forged through shared values and norms. Social psychologists, sociologists and more recently behavioral economists have studied how cooperative behaviors come about. Social capital and game theories are particularly useful here. Beginning with Axelrod's now classic "iterated prisoner's dilemma" experiments conducted in the early 1980s, game theorists have studied the nature of cooperative and collaborative behaviors that manifest between two social actors construed as equals or peers (1980). The application of game theory to the study of collaborative dynamics has deepened our capacity to appreciate how power flows across horizontal relations (Koppenjan and Klijn, 2004; Hanaki, et al., 2007).

In addition to the vertical and horizontal vectors of relational power outlined above, it is useful to recognize the possibility that the structure of power relations between two or more actors in a governance network may be comprised of a mixture of both vertical and horizontal relations. We find diagonal ties manifesting as the "principal-agent problem" resulting from information asymmetries between agents "on the ground" and closest to the work, and their principal overseers. With greater access to information, agents possess a measure of power over their principals, positioning the agent as more of a negotiating and bargaining partner. Although principals may possess formal vertical authority, informally, they must rely on the development of horizontal ties, oftentimes through extensive negotiation and bargaining. Diagonal ties bring with them the burdens of certain kinds of transaction costs that come with extensive concession and compromise (Milward and Provan, 1998).

Because network relations can take many forms, power has been described as flowing in social networks

through authority welded against, over, shared and negotiated between two or more nodes in a social network. Taking into account the complexity of relational ties that are possible in governance networks, Sorensen and Torfing argue that the policy actors may not, "be equal in terms of authority and resources" (Mayntz, 1993, p.10). There might be asymmetrical allocations of material and immaterial resources among the network actors…" (Sorensen and Torfing, 2008, p.9). These asymmetries trigger the development of more vertically oriented administrative authorities.

Social network and social capital theories assist our understanding of how cooperation and collaboration exist as essential features of network management. Although much has been written about the increasing reliance on negotiation and bargaining in public administration, much of this literature focuses on negotiation and bargaining in terms of formalized protocols designed to mediate conflicts and derive collective agreements. Although it has been touched on in articles (Agranoff and McGuire, 2004), negotiation and bargaining as a form of administrative authority has yet to be fully articulated.

In public administration, Donald Kettl observes that, "The basic administrative problem of indirect government… is developing effective management mechanisms to replace command and control" (2002, p.491). According to Kettl, networked public managers, "have to learn the points of leverage, change their behavior to manage those points of leverage, develop processes needed to make that work, and change the organizational culture from a traditional control perspective to one that accommodates indirect methods" (2002, p.493). Although classical paradigms in public administration have tried to distinguish administration from politics, in the networked environs of the "disarticulated state" (Frederickson, 1999), politics is understood as an integral feature of administrative action. "Politics can be seen as aggregating individual preferences into collective actions by some procedures of rational bargaining, negotiation, coalition formation, and exchange…" (March and Olsen, 1995, p.7). A conceptual framework is needed to account for the fragmented and dynamic confluence of multiple forms of administrative authority that emerge in networked environs. The table below describes the relationship between the public administration paradigm, the dominant administrative structure of the paradigm, and corresponding central administrative dynamic.

The conclusion to be drawn here is that governance network administrators will need to rely on a variety of types of administrative authority. The blurring of sector boundaries within governance networks has lead to the proliferation of mixed administrative authority structures, leading to serious reconsiderations of managerial roles and functions, which, in turn, has led to reconsiderations of accountability (Mashaw, 2006; Koliba Mills, and Zia, accepted for publication) and performance (Radin, 2006; Frederickson and Frederickson, 2006). The development of the governance network as an observable and ultimately, an analyzable, phenomena has been suggested as a means through which to establish management and administrative practices that can contribute to a richer understanding of cross-jurisdictional relations that are characterized by both vertical and horizontal relations. Because of the combination of mixed-form authority structures that persist in governance networks, the classical public administration considerations of public bureaucracies and command and control forms of management are still very relevant. In mixed-form governance networks, public bureaucracies still play a very

Table 3: The Convergence of Three PA Paradigms in Governance Network Administration

Public Administration Paradigm	Dominant Administrative Structure	Central Administrative Dynamics
Classical Public Administration	Public bureaucracies	Command & control
New Public Management	Public bureaucracies *or* private firms	Competition; Concession & compromise
Collaborative Public Management	Partnerships with private firms, non-profits and citizens	Collaboration & cooperation; Concession & compromise
Network Administration	Mixed-form governance networks	Command & control; Competition; Concession & compromise; Collaboration & cooperation

pivotal role, even within the most highly decentralized governance networks. Their cultures and command and control hierarchical structures help shape the public bureaucracies' participation in governance networks. Because governance networks often engage actors from multiple social sectors, including those private firms guided by markets and market forces, new public management (NPM) considerations of public-private partnerships, contracting out, and reliance on market forces are useful in the study of governance networks. The central premise behind NPM is to bring market efficiencies to the delivery of public goods and services.

Governance networks are also likely to involve some collaborative alignments. "Collaborative management is a concept that describes the process of facilitating and operating in multiorganizational arrangements to solve problems that cannot be solved, or solved easily, by single organizations. Collaboration is a purposive relationship designed to solve a problem by creating or discovering a solution within a given set of constraints…" (Agranoff and McGuire, 2003, p.4). The emerging body of literature pertaining to "collaborative public management" (Agranoff and McGuire, 2003; Bingham and O'Leary, 2008) and "collaborative governance" (Ansell and Gash, 2008) needs to be woven into a differentiated theory of network management. The ongoing studies of collaborative management and collaborative governance will deepen our understanding of the kind of skills, attitudes and dispositions needed to foster effective horizontal administrative relationships.

All of the skills necessary to successfully manage hierarchies, harness market forces, and foster collaborations combine to form the basis of a governance network administration paradigm. Kickert, Klijn and Koppenjan, (1997) define "network management" as the combination of, "governance and public management in situations of interdependencies. It is aimed at coordinating strategies of actors with different goals and preferences with regard to a certain problem or policy measure within an existing network of inter-organizational relations" (Kickert, et al., 1997, p.10). We argue that effective network management requires the use of all forms of administrative dynamics, including command and control, competition, concession and compromise, and

collaboration and cooperation. We conclude that the classical PA, the NPM, and the collaborative management paradigms are useful to the study of governance network administration and combine to form the basis of a network framework. A dilemma only surfaces when we constrain our assumptions to one paradigm.

3. Inter-Sector Arrangements and Performance

Proposition 3.0: Our capacities to evaluate multi-sector arrangements will need to evolve, with particular attention paid to the role that sector characteristics (governance structures, measures of performance and accountability regimes) play within governance networks.

Governance networks have been described as being comprised of individual organizations that are situated in either the public, private or non-profit sectors. The organizational actors implicated in governance networks may be characterized in terms of the social sector to which it belongs. The three social sector model presented in table 4, is a widely adapted model that draws distinctions between the public, private and civil society distinctions arising between these sectors (Janoski, 1998; Brooks, 2002). The importance of cross-sector relationships has been described in terms of boundary blurring (Kettl, 2006), as instances of regulatory capture (Peltzman, 1976), and most recently, in the context of re-regulation and nationalization. The implications of sector-blurring have been framed as classical trade-offs between markets and democracy (Stone, 2002), between governments and businesses (Moe, 1987), and public funding and charitable giving (Horne, Van Slyke and Johnson, 2006). Sector blurring also raises important questions pertaining to public and democratic accountability, suggesting that the relationship between sectoral characteristics and the roles, resources, and influences they bring to governance networks needs to be understood.

At this juncture, very little is known about how the different governance and administrative structures of the public, private and non-profit sectors inform the governance of the entire governance network. A view of the difference in performance standards across the public, private and non-profit sectors connotes a continuum of clearly defined measures: nearly universal measures (such as profit); to the ambiguity-riddled challenges of measuring successful public policies (Stone, 2002); to the highly context specific and mostly localized performance standards ascribed to individual nonprofit organizations (Stone and Ostrower, 2007). Although there is some literature that has discussed the differences between social sectors, and how these differences impact contractual agreements and public-private partnerships (Gazley, 2008), a full accounting of inter-sector dynamics is largely missing from the literatures reviewed here. The challenges associated with principal-agent problems get compounded when private contractors are viewed as interest-groups capable of capturing contractual and regulatory authorities. These considerations lead us to conclude that we need to evolve our capacities to evaluate multi-sector arrangements.

4. Multiple Policy Functions

Proposition 4.0: Governance networks play a critical role in coupling policy streams.
In the realm of policy studies, several conceptual models have been used to describe the creation, imple-

Table 4: Characteristics of Social Sectors

Social Sector	Organizational Actors	"To whom" accountabilities are rendered	Predominant performance standard(s)
Public	Governments (national, state, regional, local)	Citizens & interest groups; Elected officials	Policy goals; meeting public needs; implementing policies
Non-profit	Non-profit Organizations (NGOs)	Citizens & interest groups; Board of directors; clients	Fulfillment of mission
Private	Corporations, firms, businesses (For profit organizations)	Owners/shareholders; customers; Board of directors	Profit

mentation and monitoring of public policies. Process models include the classic policy cycle (Patton and Saw-icki, 1986) and more recently the policy stream (Kingdon, 1984). Kingdon proposed that three streams (problem, policies/solutions, and politics) operating distinctly and in conjunction with one another provides another conceptual model of the policy process. Unlike the classic policy cycle, Kingdon's policy stream model does not assume linearity, nor rational behavior on the part of policy actors. The problems, polices and politics streams may couple, and in fact, need to couple for agendas to be set and policy windows to open. He recognizes that policy streams are created and directed through social networks and indirectly asserted that social networks form as a result of one stream, or some coupling of multiple streams (1984). Kingdon recognizes that a number of policy actors, including interest groups, academia, media, and political parties coordinate actions within and across the policy stream. Kingdon focuses on the role that the coupling of policy streams lead to agenda setting and policy windows. He grounds the policy stream model in the coordinated actions that arise during the pre-enactment phases of policy selection and design.

To account for the post-enactment of policy tools, Tony Bovaird builds on the policy stream model by combining some of the stages of the policy cycle with the characteristics of policy streams and differentiates between stages in the policy development and policy coordination process (2005). He also distinguishes between regulatory policy implementation and services policy implementation, and allows for policy evaluation and monitoring as a "stream." The figure below outlines the ways in which a governance network is implicated in one of the policy streams.

Governance networks can be aligned with various layers of the policy stream simultaneously. These streams may be understood in terms of the pre-enactment of public policies and the post-enactment of public policies. Network configurations have been described in terms of the pre-enactment phases of the policy stream in the literature pertaining to iron triangles, issue networks (Heclo, 1978), policy subsystems (Baumgartner and Jones, 1993), interest-group coalitions (Hula, 1999), and policy networks (Rhodes, 1997). Post-enactment network configurations have been described as third party government (Salamon, 2002), implementation networks (O'Toole, 1997), and public management networks (Milward and Provan, 2006;

Frederickson and Frederickson, 2006; Agranoff, 2007). The selection and implementation of particular policy tools or suites of policy tools (Salamon, 2002) play a central role in the organization of governance networks and their alignment within and across policy streams.

It is apparent to us that networks carrying on particular policy functions or combinations of particular policy functions are more likely to rely on certain combinations of policy actors more than others. The extent to which it is important to compare network configurations that appear over multiple policy streams ranging across the pre-enactment and post-enactment phases of policy development and implementation has yet to be fully explored within the literature. Although we believe the policy stream model discussed here may be useful, we recognize that policy functions have also been defined in terms of a specific policy domain such as emergency management networks, health care delivery networks, regional transportation networks, or environmental management and planning networks. We believe that it would be useful to construct a trans-domain framework for describing and analyzing governance networks. This becomes particularly apparent as the lines between discrete policy domains overlap as social problems become more complex and wicked.

5. The Nested Complexity of Social Scale

Proposition 5.0: If the unit of analysis is to be the inter-organizational governance network, variation in the scale of social actors needs to be taken into account.

We classify the types of network structures and characteristics found across the literature in terms of a nested configuration of levels of analysis. Looking across the literature, we find some frameworks focusing exclusively on the whole network as the unit of analysis (O'Toole, 1990; Rhodes, 1997; Milward and Provan, 2006; Frederickson and Frederickson, 2006; Agranoff, 2007; Provan and Kenis, 2007; Provan, Fish and Sydow, 2007); while others combine individual member characteristics and whole networks (Agranoff and McGuire, 2003; Mandell and Steelman, 2003; Koppenjan and Klijn, 2004; Koontz et al., 2004) into their frameworks.

The scale of a particular network node is a critical determining feature in any piece of network analysis. In social networks, nodes may represent very different kinds of social scale ranging from individual people, small groups of people (individual teams, committees, departments, offices, etc…), to entire organizations. Although multi-scale network modeling is beginning to be devised, at this current time, we argue that most network analysis within the public administration and policy studies literatures has been rendered by observing the relationship between nodes of a comparable scale.

In dealing with complex networks found within social systems, the matter of social scale is a preeminent consideration (Dodder and Sussman, 2002). This is particularly true if the social system is comprised of more than individuals, extending into the small group and organizational levels. In order to understand how social networks encompass multiple levels of scale, it is useful to consider how "scale-free" networks grow. The basic premise behind scale-free networks is an assumption regarding the almost unlimited capacity to continue to add nodes to the network. Mathematically speaking, new nodes being added to the network tend to demon-

Figure 3: A Governance Network's Relation to the Policy Stream

Problem Definition	• Networks are mobilized around aligned views of the scope, severity and causes of the problem
Policy Design and Planning	• Networks are mobilized to examine policy alternatives and/or plan for the implementation of policy tool or suite of tools
Policy Coordination	• Once policy tools or suite of tools is selected, networks may exist to coordinate the implementation of the policy
Policy Implementation (Regulatory)	• Networks are created on the basis of principal-regulator and agent-regulated relationships between actors
Policy Implementation (Service Delivery)	• Networks are mobilized around the delivery of some kind of public good or service
Policy Evaluation / Monitoring	• Networks are organized around the monitoring or evaluation of the implementation of policies
Political Alignment	• Networks are mobilized to advance a political agenda

Adapted from Boviard, 2005

strate a preferential attachment to nodes with greater number of existing links. Mathematician Albert-Laszlo Barabiasi, who has done a great deal to popularize network analysis while serving as one of its preeminent scholars, describes preferential attachment as follows:

> We assume that each new node connects to the existing nodes with two links. The probability that it will choose a given node is proportional to the number of links the chosen node has. That is, given the choice between two nodes, one with twice as many links as the other, it is twice as likely that the new node will connect to the more connected nodes (2003, p.86).

The picture of a scale free network that gets painted here is a visual structure of individual nodes (be they individual websites, cells or human beings, or organizations), clumping together to form clusters. These clusters, in turn, cluster with other clusters, and so on. We have already noted how the clustering of clusters forms the basis of certain kinds of hierarchical arrangements (Ravasz and Barabasi, 2003). We may view the scale-free dimensions of social networks as being represented in the nested nature of individual people, coalescing into small groups, which, in turn, form organizations, which, in turn, form inter-organizational networks.

Systems theorists have recognized the "nested complexity" of social networks (Dodder and Sussman, 2002). Sociologically, the matter of social scale has been framed as a distinctions between macro, meso, and micro levels of analysis (Collins, 1988). Figure 4 provides a visual representation of the ways in which nodes of a smaller social scale (individual) may be understood as nesting within larger scales (organizational).

The conclusion that we may draw from this observation is that governance networks, as social networks, are multi-scalable, with the nodes of a social network defined in terms of individual persons, groups of people, or organizations.
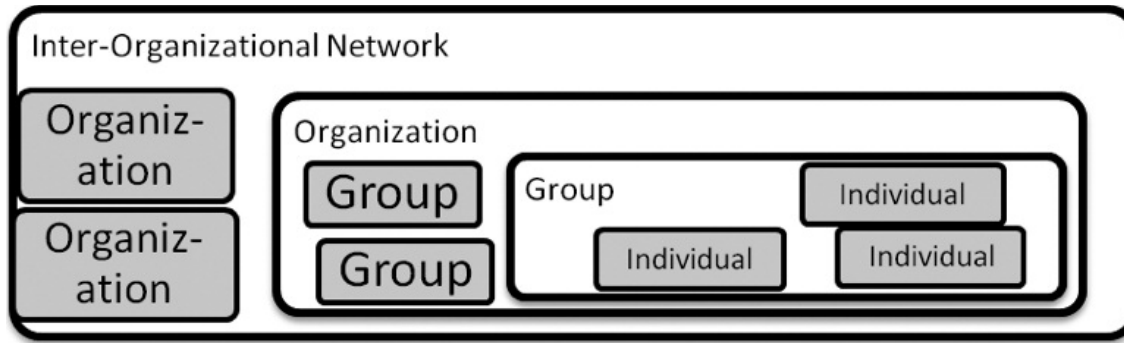
Organizations and Institutions. The extensive bodies of literature that focuses on the study, description and evaluation of organizations and institutions across the public, private and non-profit sectors is relevant to the development of any meta-level theory of governance networks. Theories relating to institutionalism, neo-institutionalism, and new institutionalism (Peters, 2005) as well as the organizational development literatures found across many social science disciplines are relevant resources to draw from when describing organizational characteristics and behaviors.

Groups of Individuals. Case studies of governance networks often highlight the roles that small groups of individuals play in the administration and governance of inter-organizational networks. These small group configurations have been described as taking the forms of committees, taskforces, advisory groups, and teams operating within governance networks. Small groups may take on formal roles and responsibilities within the network, operating as central coordinating mechanisms designed to steer the governance network. Rhode's social exchange theory Integrates group configurations as "dominant coalitions" operating within the broader network (1997). Sabatier's ATF framework refers to these small groups as "policy subsystems" (Sabatier and Jenkins-Smith, 1993). Historically, the locus of power found in iron triangles were often described as formal and informal conferences, panels, committee meetings. In some instances, as in cases in which committees, authorities, and taskforces are given resources to create, maintain, or govern broader inter-organizational networks, groups turn into formal network administrative organizations (NAOs) (Provan and Kenis, 2007), shaping how governance networks are lead and, ultimately, governed.

The importance of group structures and functions to the operation of the wider network has been recognized across many of the case studies of network configurations (Wenger, 1998; Koontz et al., 2004; Agranoff, 2005; 2007). Some have isolated these groups for study, drawing implications for network-wide performance in fields such as health care (Rodriguez et al., 2007), emergency management (Incident command centers: Moynihan, 2008), education (Gajda and Koliba, 2007), and transportation (Metropolitan planning organizations: Wolf and Farquhar, 2005). Oftentimes these groups, committees, task forces, commissions and authorities serve as the nerve center for network wide operations, providing the physical and virtual spaces for inter-personal coordinated actions and resource exchanges to occur. These groups have begun to be described as "communities of practice" (Wenger, 1998; Synder et al., 2003; Goldsmith and Eggers, 2004; Agranoff, 2005; Koliba and Gajda, 2009) capable of spanning organizational boundaries, facilitating the alignment of practices, and coordinating action pertaining to network-wide objectives.

Individual People. Distilled to their most rudimentary level, social networks must be composed of inter-locking and clustering nodes of individual people. The importance of individuals to the governing, management and ultimate success and failure of governance networks may be recognized in the countless case studies written describing and evaluating inter-organizational network functions. The importance of individual leaders

Figure 4. The Nested Complexity of Social Networks

have been recognized in discussions of critical skills (Salamon, 2002; Agranoff and McGuire, 2003; Agranoff, 2007) and as differences between participants as individuals or as representatives of participating organizations and institutions (Koontz, et al., 2004).

Those responsible for managing within and across governance networks, be they construed as collaborative public managers or network managers, are particularly relevant to those looking to understand how governance networks operate and ultimately, we will argue, democratically governed. Individuals also play important roles in the accountability structures of governance networks.

Milward and Provan (2006) and Agranoff and McGuire (2003) among many others have recognized that as administrators of and within governance networks, public managers play a critical role in ensuring that democratic and administrative accountability exists within all forms of governance network. It has been recognized that managing within networks brings a degree of complexity to administrative and managerial tasks. Mathur and Skelcher (2007) argue that network governance through the nodes of public-private partnerships and government-nonprofit collaboratives are reshaping the role of the public administrator from a "neutrally-competent servants of political executive" to "responsively competent players in a polycentric system of governance" (p. 231).

Recognizing the relationship between the individual and institutional levels of network actors, Koontz et al. (2004) distinguish between governmental actors as the "flesh-and-blood employees, elected officials, and other people in government who take action within the context of [the institutions they represent]" and governmental institutions themselves (p.22). Individual "[g]overnmental actors and institutions, together or separately, constitute governmental roles in a particular collaborative effort" (Koontz et al., 2004, p.22). Drawing on a series of case studies of environmental collaboratives in which governments play any number of roles (leading, following, facilitating, etc.) they observe the ways in which individual "governmental actors critically affect collaboration; in others, institutions may dominate; in yet others, both could be crucial; and in some cases, neither may make a substantial impact" (2004, p.22). They also suggest that individuals and their institutions exist interdependently, with each providing constraints on the other. They conclude that, "governmental roles in a particular case may be quite complex, particularly if the [individual] actors are seeking to change institutions in ways that promote or constrain collaboration" (2004, pp.22-23). We may argue that the observa-

tions that they make regarding governmental actors and roles may be extended to private and non-profit sector actors as well.

In examining the relationship between social scale and the roles of consensus and conflicts arising in policy networks, Joop Koppenjan explores the relationship between institutional levels actors, group level actors, and individual actors, and, following Koontz et al.'s observations (2004), suggests ways in which actors at various levels of social scale bring certain measures of interdependence and autonomy to their network participation (2008, p.151). Thus, we are left to conclude that network actors may or may not represent the interests of the actors from other levels of social scale, suggesting here that an individual may actively participate in a governance network without officially representing the groups or organizations to which they belong. We are left to conclude that the consideration of social scale as a critical characteristic in the operations of governance networks brings a measure of complexity to any study of social structures of this nature.

CONCLUSIONS

In this chapter we have discussed some conceptual considerations that are useful in further theory development and research on governance networks. We argue for an operational definition of "mixed form" governance networks, suggesting that we view markets, hierarchies and collaboratives as types of network structures. We suggest that mixed-form governance networks be viewed as relatively stable patterns of coordinated action and resource exchanges; involving policy actors crossing different social and geographic scales, drawn from the public, private or non-profit sectors and across geographic levels; who interact through a variety of competitive, command and control, cooperative, and negotiated arrangements; for purposes anchored in one or more facets of the policy stream.

What remains to be seen is how the range of theoretical frameworks and methodological tools that exist, not only within the existing public administration and policies studies fields, but also across other social and natural science fields, may be corralled into an evolving integrated-theory for describing, comparing, analyzing and evaluating governance networks.

In this chapter we argue that the complexities that surface when the unit of analysis is the inter-organizational governance network are shaped by the multiple roles and functions that social actors take on. The individual people who populate the network are likely to be guided by multiple decision heuristics and multiple roles and allegiances. Group dynamics will likely evolve over time, transformed by external inputs and internal exchanges. Organizations and institutions will be subject to competing priorities and expectations. Simply put, the best we may ever be able to do is to approximate real world dynamics through the development of theories and models.

Complexity scientists John Miller and Scott Page observe that, "… the goal of theory is to make the world understandable by finding the right set of simplifications." They go one to add that, "Modeling proceeds by deciding what simplifications to impose on the underlying entities and then, based on those abstractions, uncovering their implications" (2007, P.65). In this chapter we offer six propositions (listed in table 5) that may be

Table 5: Summary of Propositions regarding Mixed Actor Governance Networks

Consideration	Question	Proposition
1. Macro-Level Forms	Are hierarchies and markets forms of networks or should networks be considered as distinct from them?	*1.1: Governance networks may be comprised of hierarchical, market and collaborative structures.* *1.2: Governance networks are shaped, in part, by the organizational structures that individual actors bring to the network.*
2. Administrative Authority	How to account for mixed (vertical & horizontal) administrative ties?	*2.0: There will be asymmetrical allocations of material and immaterial resources and power among the network actors. Such allocations influence the structure of administrative authority of the network.*
3. Sectoral Composition	How to account for multi-sector arrangements?	*3.0: Our capacities to evaluate multi-sector arrangements will need to evolve, with particular attention paid to the role that sector characteristics (governance structures, measures of performance and accountability regimes) play within governance networks.*
4. Policy Function	How to account for networks emerging across multiple policy streams?	*4.0: Governance networks play a critical role in coupling policy streams.*
5. Social Scale	How to account for actors of mixed social and scale?	*5.0: If the unit of analysis is to be the inter-organizational governance network, variation in the scale of social actors needs to be taken into account.*

used to simplify or inform the kind of modeling of governance networks that we believe possible.[5]

Complexity theorists looking to study and model governance networks may seek to reject some of the reductionist tendencies found in our list of considerations. They will likely want to begin with the governance network as a whole and develop models to predict emergent qualities. Emergent qualities are important to comprehend because they are central features of system resiliency. The resilience of complex governance networks becomes important for two reasons: when governance networks fail to be resilient (as in the recent cases of failed emergency management networks and financial regulation networks); and when governance networks become too resilient and fail to adapt to changing conditions.

A consideration of the range of conceptual dilemmas and theoretical constraints discussed in this chapter inevitably leads us to render this conclusion: we cannot ignore the emergent complexity inherent within inter-organizational governance networks. Clearly, new methods for describing, analyzing and evaluating these phenomena are needed. Most challenging is that while we believe that the fundamental features of mixed actor

governance networks can eventually be identified, the central patterns of behavior that can be observed from mixed formed governance networks are emergent. The extent to which they evolve into more "predictable" yet indeterminate patterns poses a tremendous and exciting challenge. In the mean time, the emergent qualities of mixed actor governance networks are likely to frustrate our understanding and meaningful application of standard forms of accountability, legitimacy, responsibility and authority.

ENDNOTES

[1] A longer version of this chapter was originally presented at the 5th Annual TransAtlantic Dialogue: Future of Governance, Washington, D.C . June 11-13, 2009. A fuller exhortation of the conceptual architecture discussed here is provided in the book written by the authors published by Taylor and Francis titled: *Governance Networks in Public Administration and Public Policy*.

[2] These sections are being reproduced by permission from Taylor & Francis. All tables and figures found in this chapter come from Koliba, Meek and Zia, 2010.

[3] With the obvious exception of inter-governmental networks, which may be described as networks of governments of different geographical scope.

[4] With the obvious exception of inter-governmental networks, which are relegated to networks of public sector organizations.

[5] We believe that the propositions laid out here can guide the future development of governance network theory. We recognize that many more considerations will need to be addressed if an integrated theory of governance networks is to evolve, including the need for further elaboration on the relationship between governance structures and the accountability and performance management considerations that must go with them. The role of policy tools, as developed by Lester Salamon and his colleagues (2002), may be added to this framework. We opted to leave out the consideration of geographic scale, recognizing that the extensive literature on inter-governmental relations underscores the importance that geo-spatial scale plays in the structures and functions of governance networks. The forces of globalization and internationalization are also pressing for deeper consideration of geographical scale.

REFERENCES

Agranoff, R. (2007). *Managing within networks: Adding value to public organizations*. Washington, D.C.: Georgetown University Press.

Agranoff, R. (2005). Enhancing performance through public sector networks: Mobilizing human capital in communities of practice. *Public Performance & Management Review*. 31(3), 320-347.

Agranoff, R. and McGuire, M. (2001). Big questions in network management research. *Journal of Public Administration Research Theory*. 11(3), 295-326.

Agranoff, R., and McGuire, M. (2003). Collaborative public management: New strategies for local governments. Washington, D.C.: Georgetown University Press.

Agranoff, R., and McGuire, M. (2004). Another look at bargaining and negotiation in intergovernmental management. *Journal of Public Administration Research and Theory*. 14(4), 495-513.

Albert, L, Gainsborough, J. and Wallis, A. (2006). Building the capacity to act regionally: Formation of the regional transportation authority in South Florida. *Urban Affairs Review*. 42(2), 143-168.

Ansell, C., and Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Adminis-

tration Research and Theory. 18(4), 543-571

Axelrod, R. (1980). *The evolution of cooperation*. New York: Basic Books.

Barabiasi, A. (2003). Linked. Cambridge, MA: Penguin Books.

Bardach, E. (1998). *Getting agencies to work together: The practice and theory of managerial craftsmanship.* Washington, D.C.: Brookings Institution.

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

Baumgartner, F. R., and Jones, B. D. (Eds.). (2002). *Policy Dynamics*. Chicago: University of

Chicago Press.

Bingham, L.B. and R. O'Leary, R.O., (Eds.). (2008). *Big ideas in collaborative public management.* Armonk, N.Y.: M.E. Sharpe

Bogason, P., and Musson, J. A. (2006). The democratic prospects of network governance. *American Review of Public Administration*. 36(1), 3-18.

Borgatti, S. P., and Foster, P. C. (2003). The network paradigm in organizational research: A review and typology. *Journal of Management*, 29(6), 991-1013. 29(6), 991-1013.

Bovaird, T. (2005). Public governance: Balancing stakeholder power in a network society. *International Review of Administrative Sciences*. 71(2), 217-228.

Brooks, A. (2002). Can nonprofit management help answer public management's "Big questions"? *Public Administration Review*. 62(3), 259-266.

Bryson, J., Crosby, B., and Stone, M.M. (2006). The design implications of cross-sector collaborations: Propositions from the literature. *Public Administration Review*. 66(6), 44-55.

Collins, R. (1988). *Theoretical sociology*. San Diego, CA: Harcourt Brace Jovanovich.

Comfort, L. (2002). Managing intergovernmental responses to terrorism and other events. *Publius.* 32(4), 29-51.

Cooper, P. (2003). *Governing by contract: Challenges and opportunities for public managers.* Washington, DC: CQ Press.

Dodder, R., and Sussman, J. (2002). The concept of a CLIOS analysis illustrated by the Mexico city case. *MIT Engineering Division Working Paper*, ESD-WP-2003-01.07.

Frederickson, D., and Frederickson, H. G. (2006). *Measuring the performance of the hollow state*. Washington, DC: Georgetown University Press.

Frederickson, H. G. (1999). The repositioning of American public administration. *Political Science and Politics*. 32(4), 701.

Frederickson, H. G. (2007). Filling up the hollow state: The state of agents project. *PA Times*, December(11).

Gage, R.W. and M. P. Mandell, M.P. (Eds.), (1990). *Strategies for managing intergovernmental policies and networks*. New York: Praeger Publishers.

Gajda, R., and Koliba, C. (2007). Evaluating the Imperative of Intra-Organizational Collaboration: A School Improvement Perspective. *American Journal of Evaluation*, 28(1), 26-44.

Gazley, B. (2008). Intersectoral collaboration and the motivation to collaborate: Toward an integrated theory. In L. B. Bingham & R. O'Leary (Eds.), *Big ideas in collaborative public management.* Armonk, N.Y.: M.E. Sharpe. 36-54.

Goldsmith, S., and Eggers, W. (2004). *Governing by network.* Washington D.C: Brookings.

Grimshaw, D., Marchington, M., Rubery, J., and Willmott, H. (2005). Introduction: Fragmenting work across organizational boundaries. In M. Marchington, D. Grimshaw, J. Rubery & H. Willmott (Eds.), *Fragmenting work: Blurring organizational boundaries and disordering hierarchies*. Oxford: University Press.

Gulick, L. and Urwick, L. (eds.) (1937). *Papers on the science of administration*. New York: Institute of Public Administration.

Hanaki, N., Peterhansl, A., Dodds, P. S., and Watts, D. J. (2007). Cooperation in evolving social network. *Management Science*, 53(7), 1036-1050.

Heclo, H. (1978). *Issue networks and the executive establishment*. Washington, DC: AEI Press.

Hill, M., and Hupe, P. (2002). *Implementing public policy: Governance in theory and in practice*. London, Thousand Oaks, New Delhi: Sage Publications.

Horne, C.S., Van Slyke, D.C., and Johnson, J.L. (2006). Charitable choice implementation: what public managers should know about public opinion and the potential impact of government funding on private giving. *International Journal of Public Administration*. 29.10-11 (July 15, 2006), 819-837.

Hula, K. W. (1999). *Lobbing together: Interest group coalitions in legislative politics*. Washington, D.C.: Georgetown University Press.

Imperial, M. T. (2005). Using collaboration as a governance strategy. *Administration & Society*. 37(3), 281-320.

Janoski, T. (1998). *Citizenship and civil society: A framework of rights and obligations in liberal, traditional, and social democratic regimes*. Cambridge, UK: Cambridge University Press.

Jarosz, L.(2004). Understanding agri-food networks as social relations. *Agriculture and human values*. 17(3), 1572-1581.

Kapucu, N. (2006). Public-nonprofit partnerships for collective action in dynamic contexts of emergencies. *Public Management*. 84(1), 205-220.

Kelman, S. J. (2002). Contracting. In L. M. Salamon (Ed.), *The tools of government*. Oxford: University Press. 282-318.

Kettl, D. (2006). Managing boundaries in American administration: The collaborative imperative. *Public Administration Review*. 66(6), 10-19.

Kettl, D. F. (2002). Managing indirect government. In L. M. Salamon (Ed.), *The tools of government*. Oxford: University Press. 490-510.

Kickert, W., Klijn, E. H., and Koppenjan, J. (1997). *Managing complex networks: Strategies for the public sector.* Thousand Oaks, CA: Sage Publications.

Kingdon, J. (1984). *Agendas, alternatives, and public policies*. New York: Harper Collins.

Klijn, E., and Skelcher, C. (2007). Democracy and governance networks: Compatible or not? *Public Administration.* 85(3), 587-609.

Koliba, C. and Gajda, R. (2009). Communities of practice as an empirical construct: Implications for theory and practice. *International Journal of Public Administration*. 32, 97-135.

Koliba, C., Meek, J. and Zia, A. (2010). *Governance networks: Public administration and policy in an age of complexity*. London: Taylor and Francis.

Koliba, C., Mills, R., and Zia, A. (Accepted for publication). Accountability in governance networks: Lessons from hurricane Katrina. *Public Administration Review*.

Koontz, T., Steelman, T., Carmin, J., Korfmarcher, K., Moseley, C., and Thomas., C. (2004). *Collaborative en-*

vironmental management: What roles for government? Washington, DC: Resources for the Future.

Koppenjan, J. (2008) Consensus and conflict in policy networks: Too much or too little? In Sorensen, E., and Torfing, J. (eds.) (2008). *Theories of democratic network governance*. New York: Palgrave Macmillan.

Koppenjan, J., and Klijn, E. (2004). *Managing uncertainties in networks.* London: Routledge.

Krause, G. A. (1997). Policy preference formation and subsystem behaviour: The case of commercial bank regulation. *British Journal of Political Science.* 27(4), 525-526.

Laumann, E.O. (1991). Comments on Rosabeth Moss Kanter, "The future of bureaucracy and hierarchy in organizational theory: A report from the field." In Bourdieu, P. and Coleman, J.S. (eds.) *Social theory for a changing society*. Boulder, Colorado: Westview Press. 90-93.

Leach, W.D. and Pelkey, W.N. (2001). "Making watershed partnerships work: A review

of the empirical literature." *Journal of Water Resources Planning and Management.* 127, 378-385.

Leach, W. D., Pelkey, N.W., and Sabatier, P.A. (2002). Stakeholder partnerships as collaborative policymaking: Evaluation criteria applied to watershed management in California & Washington. *Journal of Policy Analysis and Management.* 21(4), 645-670.

Linder, S. H., and Rosenau., P. V. (2000). *Mapping the terrain of the public-private policy partnership*. Cambridge, MA: MIT Press.

Mandell, M. and Steelman, T. (2003). Understanding what can be accomplished through interorganizational innovations. *Public Management Review*. 5(2), 197-224.

March, J. G., and Olsen, J. P. (1995). *Democratic governance.* New York: The Free Press.

Mashaw, J. L. 2006. Accountability and Institutional Design: Some Thoughts on the Grammar of Governance. in Dowdle, M.W. (editor) *Public accountability: Designs, Dilemmas and Experiences*. Cambridge: Cambridge University Press. 115-156.

Mathur, N., and Skelcher, C. (2007). Evaluating democratic performance: Methodologies for assessing the relationship between network governance and citizens. *Public Administration Review*. 67(2), 228-237.

Mayntz, R. (1993). Modernization and the logic of interorganizational networks. In Child, M. Crozier and R. Mayntz (Eds.), *Societal change between markets and organization*. Aldershot: Avebury . 3-18.

McNabb, D.E. (Ed.). (2007). *Knowledge management in the public sector: A blueprint for innovation in government*. Armonk, New York: M.E. Sharpe.

Miller, J.H. and Page, S.E. (2007). *Complex adaptive systems: An introduction to computational models of social life*. Princeton: Princeton University Press.

Milward, H.B., and Provan, K.G. (2006). A manager's guide to choosing and using collaborative networks. *IBM Center for the Business of Government*.

Milward, H.B., and Provan, K.G. (1998). Principles for controlling agents: The political economy of network structure. *Journal of Public Administration Research and Theory*. 8(2), 203-222.

Moe, R.C. (1987). Exploring the limits of privatization, *Public Administration Review*. 47(6), 453-460.

Moynihan, D. (2008). The network governance of crisis response: Case studies in incident command systems. *Journal of Public Administration Research and Theory*. 18, 517-41.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. New York: Cambridge University Press.

O'Toole, L. J. (1990). Multiorganizational implementation: Comparative analysis for wastewater treatment. In R. W. Gage & M. P. Mandell (Eds.), *Strategies for managing policies and networks*. New York: Praeger

Publishers. 81-104.

O'Toole, J. L. (1997). The Implications for democracy in a networked bureaucratic world. *Journal of Public Administration Research and Theory*. 7(3), 443-459.

O'Toole, L. J. (2000). Different public managements? Implications of structural contexts in hierarchies and networks. In F. L. Brudney, L. J. O'Toole & H. G. Rainey (Eds.), *Advancing public management: New developments in theory, methods, and practice*. Washington DC: Georgetown University Press. 19-32.

Patton, C.V. and Sawicki, D.S. (1986). Basic methods of policy analysis and planning. Englewood Cliffs, NJ: Prentice-Hall.

Peltzman, S. (1976). Toward a more general theory of regulation. *Journal of Law and Economics*. 19, 211-240.

Podolny, J. M., and Page, K. L. (1998). Network forms of organization. *Annual Review of Sociology.* 24, 57-77.

Powell, W. W. (1990). Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behaviour*. 12, 295-336.

Provan, K., Fish, A., and Sydow, J. (2007). Interorganizational networks at the network level: A review of the empirical literature on whole networks. *Journal of Management*. 33, 479-517.

Provan, K. G., and Milward, H.B. (1995). A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*. 40(1), 1(33).

Provan, K. G., and Kenis, P. (2007). Modes of network governance: Structure, management, and effectives. *Journal of Public Administration Research and Theory*. 18, 229-252.

Raab, J., and Milward, H. B. (2003). Dark networks as problems. *Journal of Public Administration Research and Theory*. 13(4), 413-439.

Radin, B. (2006). *Challenging the performance movement: Accountability, complexity and democratic values.* Washington, D.C.: Georgetown University Press.

Ravasz, E. and Barabiasi, A. (2003). Hierarchical organization in complex networks. *Physical Review*. 67, 1-6.

Rhodes, R. A. W. (1997). *Understanding governance: Policy networks, governance, reflexivity and accountability.* Buckingham, Philadelphia: Open University Press.

Rodriguez, C., Langley, A., Beland, F., and Denis, J.L. (2007). Governance, power, and mandated collaboration in an interorganizational network. *Administration & Society*. 39(2), 150-193.

Sabatier, P.A. and Jenkins-Smith. (1993). *The advocacy coalition framework: An assessment.* Boulder, CO: Westview Press.

Salamon, L. (Ed.). (2002). *The tools of government: A guide to the new governance*. New York: Oxford.

Simon, H. (1946). The proverbs and administration. *Public Administreation Review*. 6(1), 53-67.

Sorensen, E., and Torfing, J. (eds.) (2008)). *Theories of democratic network governance*. New York: Palgrave Macmillan.

Sorensen, E., and Torfing., J. (2005). The democratic anchorage of governance networks. *Scandinavian Political Studies*. 28(3), 195-218.

Sporleder, T. L., and Moss, L. E.(2002). Knowledge management in the global food system: Network embeddedness and social capital. *American Journal of Agricultural Economics*. 84 (5), 1345-1352.

Smith, M. J. (2007). From policy community to issue network: Salmonella in eggs and the new politics of food. *Public Administration.* 69(2), 235-255.

Snyder, W. M., Wenger, E., & de Sousa Briggs, X. (2003). Communities of practice in government: Leveraging

knowledge for performance; Learn how this evolving tool for cross organizational collaboration currently is being used in a variety of public sector setting and how it can help you cultivate improved performance outcomes in your backyard. *The Public Manager* 32(4), 17-22.

Stone, D. (2002). *Policy paradox: The art of political decision making*. New York: Norton.

Stone, M. M., and Ostrower, F. (2007). Acting in the public interest? Another look at research on nonprofit governance. *Nonprofit and Voluntary Sector Quarterly*. 36(3), 416-438.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.

Wohlstetter, P., Smith, J., and Malloy, C. L. (2005). Strategic alliances in action: Toward a theory of evolution. *Policy Studies Journal*. 33(3), 419-443.

Wolf, J.F. and Farquhar, M.B. (2005). Assessing progress: the state of Metropolitan Planning Organizations under ISTEA and TEA-21.(Intermodal Surface Transportation Efficiency Act of 1991)(Transportation Efficiency Act for the 21st Century). *International Journal of Public Administration*. 28(13-14), 1057-1080.

Wright, D. S. (2000). *Models of national, state, and local relationships*. Washington, D.C.: CQ Press.

Yang, K. and Bergrud, E. (eds.) (2008). *Civic engagement in a network society*. Charlotte, NC: Information Age Publishing.

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