



# Leading public sector networks: An empirical examination of integrative leadership behaviors

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## ABSTRACT

The literature has often suggested that network leadership is different from leadership in hierarchical/single-agency structures. While this difference has been assumed, relatively little research has been conducted to determine whether such a distinction between network and hierarchical leadership actually exists. This study addresses this gap in the literature using data from 417 public sector leaders. We compared the leadership behaviors exhibited by a leader in their government agency with the behaviors exhibited by that same individual while leading his or her network. The leadership behaviors were classified into one of three categories common in the leadership literature. The results indicate that while the frequency of organization-oriented behaviors vary widely between the agency and network contexts, leaders in their networks focus more on people-oriented behaviors and less on task-oriented behaviors when compared to leading their agency.

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## 1. Introduction

A hallmark of research on collective action across sectors and geographic boundaries is the multitude of theoretical perspectives, conceptual frameworks, and empirical approaches employed to explain the topic. Researchers in various disciplines, including public administration, political science, sociology, organizational behavior, and economics, have studied multi-actor contexts, resulting in many rich literatures, some that merge nicely but, unfortunately, many others that tend to speak past one another. As Huxham (2003) argues, “even the most basic terminology is subject to varied interpretations and there seems to be little agreement over usage of terms such as ‘partnership,’ ‘alliance,’ ‘collaboration,’ ‘network,’ or ‘inter-organizational relations’” (402). Many basic questions have been asked: What are the antecedents to or determinants of collaboration (McGuire & Silvia, 2010; Thomson & Perry, 2006; Wood & Gray, 1991)? What motivates organizations to join multi-actor networks (Agranoff, 2007)? How do collaborative structures evolve/dissolve over time (Human & Provan, 2000)? What are the barriers encountered by networks and how do they overcome them (McGuire & Agranoff, 2007)? What factors influence the performance of collaborative arrangements, and how do such arrangements affect the performance of the projects and programs for which collaboration occurs (Meier & O’Toole, 2003)?

The research question that is the 800 lb gorilla in the room remains largely unaddressed: What is leadership in multi-actor settings? What behaviors characterize such a leader and, most important, how does leadership in these types of settings differ from leadership in single-agency contexts, if at all? Any discussion of action in multi-actor settings must necessarily begin with answers to these questions, yet few researchers have actually sought to define, identify, and explain leadership in such settings. Furthermore, there is no study that addresses these questions simply by studying how a large number of leaders lead their home

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agency, how they lead the network to which they belong, and how leadership varies across the two settings. Theoretically and conceptually (and, one could argue, speculatively), multi-actor or integrative leadership has been discussed; empirically, data on the subject are scarce.

In general, to integrate is to bring together parts to make a whole. When the “parts” are persons seeking to contribute to the common good who can only do so through collective action, one expects that the “whole” is greater than the sum of the parts. We use the term “network” to refer to that whole, or the form of an integrated structure that involves multiple actors—nodes—with multiple linkages, working on cross-boundary, collaborative activities. Such structures can be formal or informal, and they are typically intersectoral, intergovernmental, and based functionally in a specific problem or policy area. The melding of these parts does not just happen, however. Just as organizations require some degree of leadership to function effectively, so too do collaborative, integrated structures require leadership that facilitates productive interaction and moves the parts toward effective resolution of a problem. In some contexts, an actor representing a specific agency who is ultimately held accountable for arriving at an effective, shared solution to a problem may “take the lead.” This is particularly true in public management networks where the provision and delivery of public goods and services falls on the government leader's shoulders (McGuire, 2002).

This paper bridges the theory-data divide in order to provide an accurate picture of integrative leadership. Like studies that compare and contrast public sector management with private sector management (Allison, 1988; Rainey, Backoff, & Levine, 1976; Salamon, 2002), we endeavor to compare and contrast leadership in networks with single-agency leadership. Until significant evidence is offered to show there is a difference in leadership in these respective contexts, it is not appropriate to assume a difference or declare that a brand-new approach to leading is necessary (McGuire, 2003). Since the research hypothesis we test is that leaders respond to network needs and problems in ways that are different from that of single agencies, the focus of our investigation is a leader who operates in a network outside of his or her organization as well as inside that organization. Our research seeks answers to very simple questions: What behaviors characterize an integrative leader? How does integrative leadership differ from leadership in single-agency contexts, if at all? Using a sample of 417 network leaders, we will demonstrate quantitatively that leaders behave similarly in some ways, but that the differences across contexts are striking.

Our unit of analysis is the county-level emergency manager in the United States, who is held responsible for the mitigation of, preparation for, response to, and recovery from natural and man-made disasters. As we will argue, the local emergency manager is the ideal leader to study for comparing single-agency leadership behavior with integrative leadership behavior. Before discussing the findings, however, we will now lay the groundwork for the study by summarizing previous frameworks and research on both single-agency and integrative leadership.

## 2. Leadership research

Although leadership has been a mainstay of thought and discussion since the earliest of times, the modern study of leadership can be traced back to the late 1800s and the industrial revolution (Nahavandi, 2009; Van Wart, 2008). The combination of the rise in the use of scientific methods for the study of leadership (Nahavandi, 2009) and the central role of the leader in the scientific management movement (Van Wart, 2008) resulted in researchers attempting to identify the personal attributes and traits that would explain and predict leadership effectiveness. This approach assumed that an ideal leader would have some set of personality characteristics and physical attributes that would make him or her an ideal leader. Over the next few decades, researchers added to this list of such traits. However, as the list grew, many in the field saw this approach as fruitless. Not only was the “master list” of the necessary traits unobtainable, but it also did not account for the situational contexts in which the leader operated.

As a result, researchers began to focus on the behaviors exhibited by leaders as a way to understand and predict leadership. This movement in leadership scholarship is founded in the work undertaken by researchers at The Ohio State University and the University of Michigan. The results of studies using the questionnaires developed during the Ohio State leadership studies suggest that leadership behaviors can be categorized into two dimensions: consideration and initiating structures (Fleishman, 1953). Consideration behaviors include such things as “whether the leader is friendly and approachable, listens to subordinates' ideas and makes use of them, cares about the morale of the group, and otherwise deals with subordinates in an open, communicative, concerned fashion” (Rainey, 2003, 291). Initiating structure behaviors, on the other hand, refers to those behaviors which emphasize “setting standards, assigning roles, and pressing for productivity and performance” (Rainey, 2003, 291).

Since the time of the Ohio State and University of Michigan studies, numerous other frameworks for understanding leadership have been pursued. Much of the current work can be categorized as being part of the “contingency era” (Nahavandi, 2009) or the “transformational era” (Van Wart, 2003) of leadership research. This current research focuses either on transformational leadership, in which cultural change, vision, and charisma are central, or are attempts to integrate the existing trait, behavioral, and transformational leadership theories into a unified approach. Most of these researchers seek to understand the effects of the situational and contextual factors that affect leadership effectiveness. These researchers assume that behaviors exhibited by leaders depend upon the situational requirements arising from the circumstances in which the leader is leading. However, despite the move towards a contingency, transformational, or multifaceted approach to the study of leadership, “the focus on leadership behavior...has remained a common theme in the literature” (Fernandez, 2008).

In his 2003 review of the public sector, leadership literature, Van Wart found that only a handful of public sector leadership articles were written in the last six decades. The trends noted by Van Wart were that up until the 1990s, leadership in the public sector was generally regarded as an “executive phenomenon,” and that there were very few empirical studies of leadership. Hence

the few articles that did exist were not empirical in nature and focused more on high-level officials as opposed to the mid- and lower-level bureaucrats that comprise the bulk of public sector leadership positions.

One recent leadership framework that does focus on public sector leadership and can be applied to all levels of government is the Leadership Action Cycle model proposed by Van Wart (2004). This model is a multifaceted approach to the study of leadership and therefore attempts to integrate many of the research streams described above. In the Leadership Action Cycle, leadership behavior and action is based upon the information the leader garnered while assessing the organizations and its environment, the leader's own innate traits and learned skill, and leader's chosen leadership style. The leadership behaviors then serve as the basis for the evaluation of leadership effectiveness.

Van Wart organizes the leadership behaviors into three domains: task-oriented, people-oriented, and organization-oriented (Van Wart, 2004, 2005, 2008). The task-oriented behaviors include those actions related to monitoring and assessing work, operations planning, clarifying roles and objectives, informing, delegating, problem solving, and managing innovation and creativity (Van Wart, 2008, 192). Based upon the consideration behaviors identified in the Ohio State leadership studies and the relationship-oriented behaviors discussed in the research based upon the University of Michigan studies, Van Wart's people-oriented behaviors involve "consulting, planning and organizing personnel, developing staff, motivating, building and managing teams, managing conflict, and managing personnel change" (210). Finally, the organization-oriented behaviors are related to the conceptual skills identified by Katz (1955). These behaviors include "scanning the environment, strategic planning, articulating the mission and vision of the organization, networking and partnering, performing general management functions such as human resources and budgeting, decision making, and management of organizational change" (Van Wart, 2008, 234).

### 3. Integrative leadership

The increasingly voluminous collaboration and network literature speaks only occasionally to leadership. Certainly the assumption in the research is that integrative leadership exists in collaborative structures, but seldom do researchers empirically document the actual competencies, skills, and behaviors that constitute such leadership. Indeed, "the literature on collaboration—including that on private sector alliances—has had little to say about leadership" (Huxham & Vangen, 2000), even though, as Wise suggests, leadership is critical to developing inter-organizational collaborative capacity (Wise, 2006). There are notable exceptions. Crosby and Bryson (2005) offer a *Leadership for the Common Good* framework, which characterizes leadership in terms of eight "capabilities that are necessary for remedying public problems in a shared-power world" (1). These capabilities include understanding the social and political context, building work groups, communicating and sharing a vision, and effectively implementing policy decisions, among others. The framework applies to situations "when no one is in charge" (3) and power is distributed across multiple organizations.

Some research refers to leadership in terms of tasks or behaviors rather than capabilities. As a means to provide a holistic view of integrative leadership, Huxham and Vangen (2000) identified at least 204 leadership tasks (without naming all of them) and 241 leadership processes from their decades-long action research program. Consistent with their other work (Huxham, 2003), the focus is on such processes as "building trust and mutual understanding and negotiating joint goals" (Huxham & Vangen, 2000, 1171). These processes are the collaborative equivalent of Van Wart's people-oriented behaviors.

Basing their work on previous case study research and their extensive work with networks around the U.S., Milward and Provan (2006) suggest that five groups of tasks constitute public network management. Management of accountability involves determining who is responsible for outcomes and "rewarding and reinforcing compliance with network goals" (19). Management of legitimacy includes publicizing network accomplishments and attracting resources as well as new members. Conflict management is carried out through mechanisms for resolving disputes and making decisions that reflect network-level goals. Management of design involves "determining which structural governance forms would be most appropriate to success" (22) and changing the structure when needed. Finally, managing commitment in a network includes getting "buy-in" of the network, ensuring that network resources are distributed equally, and keeping network members informed. While there is some dispute about the proper use of the terms management and leadership in networks as in single-agency settings (c.f. McGuire & Silvia, 2009), Milward and Provan's categorization lends itself to integrative leadership of public networks. For example, managing legitimacy and design can be considered organization-oriented behaviors in a single-agency framework.

In an early, longitudinal study of two cases of collaboration in rule-making groups, Feyerherm (1994) found that leadership was practiced both by the group-identified leaders of the committees and by the other members of the committees. Leadership functions were thus "diffused throughout these groups" (260) and "best thought of as a network of influence spread throughout the group" (268). The consequential behaviors that were identified in the research included such task-related behaviors as problem solving, coordinating, and evaluating, as well as people-oriented behaviors like joining disparate persons through bridging, informing and communicating, and offering support by acknowledging another person. Although Feyerherm's units of analysis were not public management networks per se, the implications of her findings for integrative leadership in community settings are consistent with leadership in a shared-power world.

Williams (2002) attempted to "build a framework of competency-based variables and factors that influence collaborative engagement, behaviour and management" (121). His empirical research, based on surveys of collaborators in three policy areas (environment, crime and community safety, and health promotion) and in-depth interviews of partnership managers within a region, was designed to identify and categorize the different competencies of a "boundary spanner." The findings emphasize the importance of building effective personal relationships, the ability to manage non-hierarchical decision environments through negotiation and brokering, the ability to connect problems to solutions, and the ability to mobilize resources and effort. Williams

went on to identify a “number of key factors and influences implicated in effective collaborative working” and these factors “involve the use of particular skills, abilities, experience, and personal characteristics” (114–115). Such behaviors include the development of sustainable, interpersonal relationships; active listening; communication aimed at establishing shared meanings; understanding; empathy; conflict resolution; creativity; innovation; empowerment; and trust building. These behaviors can be classified as people-oriented, according to the Van Wart framework.

In their book *Governing by Network*, Goldsmith and Eggers (2004) identified the main elements of managing within networks as big-picture thinking, coaching, mediation, negotiation, the ability to tackle unconventional problems, strategic thinking, interpersonal communications, and team building. The authors' central thesis is that “a program's success or failure often depends on whether the network manager masters the challenges of governing by network: aligning goals, providing oversight, averting communications meltdowns, coordinating multiple partners, managing the tensions between competition and collaboration, and overcoming data deficits and capacity shortages” (40). While the volume includes little in the way of empirical research and emphasizes the term “managing” over leadership, their claim that managing within integrated environments “requires flexibility and adaptability, knowing when to listen and when to lead, and understanding the need for change and flexibility” (165) is consistent with formulations of integrative leadership and can be classified as task-, organization-, and people-oriented behaviors if viewed from a lens of single-agency leadership.

#### 4. Emergency management in a collaborative context

Before discussing the results of our analysis, we turn to a brief discussion of the context for this study—emergency management and the behaviors exhibited by the county emergency manager. The context for this study is that of county emergency management. The field of emergency management has some distinct features that make it a very compelling and ideal context for the study of public sector integrative leadership. Like many other government functions, leadership in emergency management is central to the effectiveness of government action. But, in addition to the need for emergency managers to lead the governmental response to disasters, the large scale disasters in the past have caused the profession to realize “that disasters often exceed a single jurisdiction's or entity's ability or resources, and almost never neatly contain themselves within a single city's, county's, or even state's boundaries” (McGuire & Silvia, 2010, 280). Therefore, it has been noted that emergency management has been adapting to these complexities and becoming a “more collaborative enterprise” (Waugh & Streib, 2006, 131). The need for integrative leadership, where the emergency manager not only leads his or her own agency, but also leads a collaborative network of cross-jurisdictional government, private, and non-profit entities, cannot be understated (McGuire & Silvia, 2009).

A number of scholars have written about the need for and importance of leadership in the increasingly more collaborative field of emergency management. “The critical tasks leading up to, during, and following a disaster involve coordinating multiorganizational, intergovernmental, and intersectoral response and recovery operations” (Waugh & Streib, 2006, 134). It has been said that disaster planning “must accommodate the patterns in inter-organizational relationships that will emerge in multi-agency emergency response situations and ensure that those in leadership roles develop networks and train within multi-disciplinary contexts to facilitate their ability to operate under these circumstances” (Paton & Flin, 1999, 263). This issue was emphasized by McEntire (2002) who noted that “both intra- and inter-organizational coordination were crucial for the immediate emergency and long-term recovery periods” (371). In the case of the 2000 Fort Worth, Texas tornado, he found that the city's response efforts were well-coordinated as a result of county-level leadership efforts.

Other scholars have demonstrated that failures of collaborative leadership have doomed emergency management efforts. Kiefer and Montjoy (2006) noted that collaborative leadership involvement in emergency management activities is critical before, during, and after a disaster. In their study of the evacuation during Hurricane Katrina, they found that the lack of collaborative leadership frustrated the evacuation effort. “The problematic part was gaining the collaboration of local leaders, who would have to order evacuations in stages, and of the mobile population, who would have to understand and comply with the orders” (128). Further, “the post-Katrina evacuation plan demonstrates the need for collaboration among a number of agencies” (Kiefer & Montjoy, 2006, 128). The above underlies the assertion made by Waugh and Streib (2006) that “collaboration is a necessary foundation for dealing with...disasters” (131) and therefore “collaborative networks are a fundamental component of any emergency response” (134).

Finally, the responsibility for emergency management often falls on the shoulders of the county emergency manager. According to Waugh (1994), “county governments may in fact be the most logical and hospitable hosts for emergency management agencies because of their unique roles in state and local governance” (253). This notion is based upon the fact that counties often have ties to both state and local agencies, and have governmental structures that facilitate and encourage intersectoral collaborative efforts both horizontally and vertically (Waugh, 1994).

#### 5. Hypothesis

An underlying theme of the limited research on integrative leadership is the notion that such leadership is different from hierarchical/single-agency leadership. Organizational actors are different, the structure of operations is different (O'Toole, 1997), and the problems faced in such settings are different. That is to say, the accepted wisdom is that the tasks and behaviors of leading networks and the attendant skills needed to be an effective leader in networks must also be unique. The claim of “network management and leadership are different” is becoming the standard refrain and is now accepted as the popular wisdom (McGuire, 2003). It is time to examine that claim. An assessment of the behaviors used to lead networks is long overdue but there are no large

datasets that have been used to reject or not reject the difference hypothesis. Indeed, there are only a few publications that have attempted even to juxtapose the two literatures. Therefore, the hypothesis tested in our analysis is that there are significant differences in the usage of people-, task-, and organization-oriented behaviors across single-agency and network contexts. We test this hypothesis by analyzing data from local emergency management officials.

## 6. Methods

### 6.1. Sample

Web-based questionnaires were sent directly to 2486 county emergency managers across the country. The distribution list was generated using contact information gathered from county, state, and professional organization websites. The county emergency managers represented 46 states and the District of Columbia. The emergency management contact information could not be obtained for any of the counties in Connecticut, New Hampshire, Rhode Island, or Vermont. Delaware was the only state to which surveys were sent, but no county officials responded.

There are a few issues related to the survey that must be noted. First, comments received from those surveyed indicated that there was some reluctance on the part of many county emergency managers to respond to the survey if they did not have any staff working for them. There are many one-person shops in emergency management. Therefore, it is assumed that counties with emergency management departments in which multiple people work are over represented. This does not pose a limitation in this study since only those counties that responded as having multi-person departments were included in the research reported in this study. A total of 417 respondents lead an agency of one or more workers. Responses from these individuals are used in the analysis presented in this paper. However, a listing of all county emergency management agencies with more than one worker does not exist, so it is not known what percentage of the overall number our 417 respondents represent.

The distribution of the population, geographic, and vulnerability characteristics of the sample “looks like” that of the nation as a whole (see Table 1). The data set of 417 respondents includes a slightly greater proportion of large counties and a slightly lower proportion of small counties. Geographically, the sample also closely resembles the nation, with two exceptions. There is a smaller percentage of New England counties (FEMA Region 1), since many of the New England states do not have county-level governments. Additionally, there is a higher proportion of Midwestern (FEMA Region 5) counties in the sample. Finally, the Social

**Table 1**

Comparison of sample counties with all U.S. counties.

	All counties	Sample counties
<i>Population group<sup>a</sup></i>		
Metro areas of 1 million population or more	13.15%	19.18%
Metro areas of 250,000–1,000,000 population	10.35%	12.95%
Metro areas of fewer than 250,000 population	11.17%	14.15%
Urban population of 20,000 or more, adjacent to a metro area	6.94%	10.31%
Urban population of 20,000 or more, not adjacent to a metro area	3.34%	4.56%
Urban population of 2500–19,999, adjacent to a metro area	19.38%	17.99%
Urban population of 2500–19,999, not adjacent to a metro area	14.33%	10.31%
Completely rural or less than 2500 urban population, adjacent to a metro area	7.48%	5.76%
Completely rural or less than 2500 urban population, not adjacent to a metro area	13.85%	4.80%
<i>FEMA region</i>		
Region 1 (CT, MA, ME, NH, RI, and VT)	2.13%	0.72%
Region 2 (NY and NJ)	2.64%	4.56%
Region 3 (DC, DE, MD, PA, VA, and WV)	9.07%	7.19%
Region 4 (AL, FL, GA, KY, MS, NC, SC, and TN)	24.43%	28.06%
Region 5 (IL, IN, MI, MN, OH, and WI)	16.68%	23.74%
Region 6 (AR, LA, NM, OK, and TX)	16.01%	10.79%
Region 7 (IA, KS, MO, and NB)	13.12%	10.07%
Region 8 (CO, MT, ND, SD, UT, and WY)	9.23%	6.24%
Region 9 (AZ, CA, HI, and NV)	3.02%	2.40%
Region 10 (AK, ID, OR, and WA)	4.65%	5.28%
<i>Social Vulnerability Index Score<sup>b,c</sup></i>		
Two standard deviations below the mean	1.27%	1.20%
One standard deviation below the mean	10.06%	13.43%
Between one standard deviation and one half standard deviation below the mean	18.40%	20.86%
Between one half standard deviation below and one half standard deviation above the mean	45.43%	46.28%
Between one standard deviation and one half standard deviation above the mean	12.83%	11.03%
One standard deviation above the mean	8.88%	5.76%
Two standard deviations above the mean	3.12%	1.44%

<sup>a</sup> Data source: 2003 Urban/Rural Continuum Codes, Economic Research Service (ERS), Dept. of Agriculture.

<sup>b</sup> Data source: 2000 SoVI Scores, Hazards and Vulnerability Research Institute.

<sup>c</sup> Higher SoVI scores indicate greater disaster vulnerability.



Vulnerability Index (SoVI), which is a measure of the overall social vulnerability of each county based upon 42 socioeconomic and environmental variables, (Cutter, Boruff, & Shirley, 2003), was used to compare the sampled counties to the nation. The data set used in this analysis has a slightly higher proportion of less vulnerable counties and a slightly lower proportion of highly vulnerable counties.

## 6.2. Instrument

This study used survey data to compare the frequency of various leadership behaviors exhibited in the leaders' government agency with the frequency that they exhibit those same behaviors in their collaborative network. The survey designed to facilitate this comparison included three sections. The first section posed the following question to the respondents: "How often do you engage in the following behaviors within your emergency management department?" Respondents answered this question for each of 35 behaviors using a five-point Likert Scale. The points on the scale were labeled "Never," "Seldom," "Occasionally," "Often," and "Very Often" from one to five, respectively. The second section of the survey asked the respondents: "How often do you engage in the following behaviors in your emergency management network?" The questions, list of behaviors, and the Likert Scale in the network section of the survey were the same as was used in the single-agency section of the survey. The 35 behaviors examined were compiled from those commonly found in the leadership literature.

The final section of the survey included questions regarding the entities with which the county emergency managers collaborated, the reasons for such collaboration, the hierarchical structure of the county agency, the size of the emergency management agency, and the education levels achieved and the certifications earned by the county emergency manager.

As with many leadership studies, this analysis relies upon survey data. Friedrich, Byrne, and Mumford (2009) identified four issues "that were frequently acknowledged as undermining the contribution of survey studies" (p. 57). One of these issues, the need to "demonstrate the study's connection to other relevant theories and its incremental contribution" (p. 57), is a theoretical consideration and is addressed throughout the paper. The other three issues were methodological in nature. One of these critical methodological issues, the failure to test alternative models, is not an issue here as this study does not include a multi-variate model. The other two issues, usage of adequate controls and common method bias, were addressed in both the design of the

**Table 2**  
Integrative leadership behaviors (ranked by extent of use).<sup>a</sup>

Leadership behaviors	Type of behavior <sup>b</sup>	Mean usage	Rank
Treating all network members as equals	P	4.37	1
Freely sharing information amongst network members	P	4.16	2
Looking out for the personal welfare of network members	P	4.13	3
Encouraging support from superiors in your county government	O	4.12	4
Identifying resources (equipment, supplies, finances, manpower, etc.)	O	4.10	5
Keeping the network in good standing with higher authority in your county government	O	4.10	6
Creating trust amongst network members	P	4.03	7
Taking charge when emergencies arise	T	4.02	8
Encouraging support from stakeholders outside of your county government	O	4.02	9
Keeping the network in good standing with stakeholders outside of your county government	O	4.02	9
Brainstorming	P	4.00	11
Permitting the network members to use their own judgment in solving problems	P	4.00	12
Sharing leadership role with other network members	P	3.96	13
Identifying stakeholders	O	3.95	14
Inspiring enthusiasm for a project	P	3.95	15
Putting suggestions made by the network into operation	P	3.93	16
Maintaining a closely knit network	P	3.92	17
Establishing a shared vision	O	3.91	18
Letting network members know what is expected of them	T	3.78	19
Making sure individual roles are understood by the network members	T	3.75	20
Establishing member commitment to the network's mission	O	3.72	21
Publicizing the network's goals and accomplishments	O	3.70	22
Permitting the network to set its own pace	P	3.70	23
Scheduling the work to be done	T	3.68	24
Influencing the network's values and norms	O	3.66	25
Asking that network members follow standard rules and regulations	T	3.65	26
Coordinating the work of the network	T	3.64	27
Establishing agreement on the nature of the tasks	T	3.62	28
Keeping work moving at a rapid pace	T	3.51	29
Assigning network members to particular tasks	T	3.50	30
Settling conflicts when they occur in the network	P	3.44	31
Selecting performance measures	T	3.44	32
Deciding how tasks will be performed	T	3.40	33
Using incentives to motivate network members	P	2.97	34
Changing the network's structure	O	2.77	35

<sup>a</sup> N = 417.

<sup>b</sup> P = People-oriented behaviors; T = Task-oriented behaviors; O = Organization-oriented behaviors.

survey and the analysis of the data. In this study, we compare the frequency of behaviors exhibited by individuals while in their government agency with the frequency of those same behaviors that they exhibit in their networks. The result is that each individual acts as his or her own control. We also address the issue of organizational and network size. We control for differences in organizational size by excluding those respondents who reported having no employees. The size of the network was also accounted for since network size, as measured by the number of organizations with which the individuals collaborate, is nearly constant at thirteen members per network.

Common source/method bias may occur when the data used is collected at the same time, in the same context, using a single source or via a single collection method (Friedrich et al., 2009). Podsakoff, MacKenzie, Lee, and Podsakoff (2003) recommend that the data collection instrument be designed to lessen the potential for this type of bias. Again, the unique design of this study mediates these problems as the respondents act as their own controls, thereby mitigating the context, time, or method effect. Further, the results of the Harmon's single factor test and confirmatory factor analysis provide no evidence of the presence of common method bias in these data.

## 7. Results

### 7.1. Network leadership

Following the leadership behaviors construct in Van Wart (2008), the 35 leadership behaviors exhibited in the agency and in the network were divided into three categories: people-oriented, task-oriented, and organization-oriented behaviors. Column one in Table 2 contains the wording from the survey for each behavior in each category for the network setting. Except for modifying the questions to denote the specific contextual setting to consider, the wording of the questions in each section were identical. A Cronbach's alpha coefficient was calculated for each grouping of behaviors. The coefficients for the thirteen people-oriented, eleven task-oriented, and eleven organization-oriented behaviors are .86, .82, and .85, respectively. The strength of these coefficients provides a high-level of confidence that this categorization is both a theoretically and empirically grounded way to differentiate leadership behavior.

We posed two research questions earlier in this article: What behaviors characterize an integrative leader? How does integrative leadership differ from leadership in single-agency contexts, if at all? In order to answer these questions, we discuss our findings first by describing the leadership behaviors that are used most frequently in networks by the emergency managers. We do this quantitatively as well as by providing a portrayal of the integrative leader. Next we examine the difference between single-agency and integrative leadership quantitatively by comparing the extent of usage of each behavior and by computing difference scores. Comparisons are thus made for each respondent on each behavior.

As noted in the previous section, respondents to the survey were asked to rate how often they engage in each of the 35 leadership behaviors within each context on a scale from never (assigned a value of 1) to very often (assigned a value of 5). The mean usage for all 35 behaviors used in a network is 3.79, which suggests that, in the aggregate, emergency managers exhibit these leadership behaviors in networks slightly less than "often" but more than "occasionally." This central finding demonstrates how active emergency managers are in leading their networks. However, a composite, more realistic picture of integrative leadership is found by looking at the individual behaviors used most often. Table 2 also offers a ranking of the 35 behaviors by mean usage and classifies each behavior in terms of its category (people-oriented, task-oriented, and organization-oriented). These rankings tell a tale that in some ways is consistent with network theories, but in other ways contradicts common wisdom.

The leadership behavior used most extensively by the emergency manager is *treating all network members as equals*, and in terms of the mean, is much greater than the usage of the other behaviors (mean usage = 4.37). Certainly, the most persuasive argument regarding the differences in networks is that no single actor can "fire" another or otherwise treat network members as subordinates. Networks involve transactions by "individuals engaged in reciprocal, preferential, mutually supportive actions" (Powell, 1990). Even an emergency manager, who historically commands and controls events, understands the value of treating all actors in a network as equals. Although networks may be configured differently and can take on a more centralized structure (Provan & Kenis, 2008), which is often the case in emergency management (Moynihan, 2005), treating members as equals appears to be an important integrative leadership quality.

As shown in Table 2, *freely sharing information amongst network members* is the second most used leadership behavior in network settings (mean = 4.16). Research suggests that the processes of networks are designed to facilitate and further interaction among participants (Agranoff & McGuire, 1999; Mossberger & Hale, 1999; O' Toole, 1988), and reduce complexity and uncertainty by promoting information exchange (Gray, 1989; Innes & Booher, 1999; Termeer & Koppenjan, 1997). Freely sharing information, as opposed to stifling information flow or withholding it, acts as a lubricant that enables productive and favorable interaction among network participants. Ensuring that network members are well informed also helps build commitment to the network's activities (Milward & Provan, 2006). Combined with the most used behavior discussed above, integrative leadership is clearly based on information rather than authority (Agranoff & McGuire, 2001).

Not surprisingly, *creating trust amongst network members* is another behavior associated with integrative leadership (mean = 4.03). It is appropriate to distinguish between the existence of trust and the behaviors used to build it (Huxham, 2003). Collaborations may begin virtually "trust-free," but ultimately trust becomes a necessary component of future success (McGuire, 2006). It is generally accepted that in the absence of a legal charter, members of a network join, remain, and work together because of some element of trust. However, it is difficult to know if trust exists a priori and to empirically assess its effect on collaboration (Brass, Galaskiewicz, Greve, & Tsai, 2004). Some studies suggest that the success of collaboration depends on a collaborator

trusting another organization, even if not a specific individual (Zaheer, McEvily, & Perrone, 1998), whereas others conclude that trust is grounded in a positive expectation about the behavior of individual participants in a collaboration (Ferguson & Stoutland, 1999). Even in the potential absence of trust, integrative leaders still work to create it.

Managing the external network environment is important for the integrative leader as five leadership behaviors dealing with external relationships are ranked highly. *Encouraging support* from and *keeping the network in good standing with the higher authority* in the county government rank in the top six most commonly used leadership behaviors (mean usage = 4.12 and 4.10 respectively). And *encouraging support* from and *keeping the network in good standing with stakeholders* inside and outside the county government rank in the top nine (mean usage = 4.02 for each). Such behavior helps establish the legitimacy of the network (Milward & Provan, 2006) and acts as a “mobilizer” to develop commitment and support for network processes from network participants and external stakeholders. *Identifying resources* such as equipment, supplies, finances, and manpower is a behavior that is external to the county agency as well, and one that is central to effective network operations (mean usage = 4.10) (Agranoff & McGuire, 1999).

Some behaviors that are utilized comparatively less frequently are surprising and contradict some network theories. For example, some have argued that structure can be (or should be) changed based on network and participant needs (Agranoff & McGuire, 2001; Milward & Provan, 2006). However, at the bottom of the rankings is the behavior *changing the network structure*. One interpretation of this finding is that the extent to which an integrative leader changes/alters the structure of the network may depend heavily on the policy area within which the network operates. In emergency management, there is typically a leader of the network, and network interactions and operations may be more important than structure. Additionally, although the lowest behavior in the rankings, the mean usage of 2.77 suggests that network restructuring is, indeed, occurring, even if comparatively less frequently. Similarly, the behavior *influencing the network's values and norms* is down the ranked list, contrary to what some have theorized to be an important part of the integrative leader's responsibility (Kickert & Koppenjan, 1997; McGuire, 2002).

The most striking finding is the extent to which people-oriented and organization-oriented behaviors are used compared to task-oriented behaviors. The top three behaviors are people-oriented. Seventeen of the 18 ranked behaviors are either people- or organization-oriented behaviors (see the second column of Table 2). Ten of the 13 people-oriented behaviors are ranked in the top 17. The one task behavior that does show up with above average usage is *taking charge when emergencies arise* (mean usage = 4.02), which is hardly surprising, given the role of the emergency manager. Also, seven of the last 10 in the rankings are task-oriented behaviors.

## 7.2. Comparison of integrative and single-agency leadership

Now that we have provided a picture of integrated leadership based on the findings from the survey of emergency managers, the second issue to address is whether such leadership is actually different from leadership in single-agency settings. If the same leadership behaviors are performed in both networks and within the manager's home agency to the same extent, then a separate integrative leadership style does not exist. If, however, the extent and type of leadership behavior in networks differs from behavior in the agency, then the multi-actor, multi-sector concept of integrative leadership will have some validity.

Whereas the mean of total network leadership is 3.79, the mean of total single-agency leadership is 4.02. This difference in total extent of behavior can be explained by previous research, which has found that operating in networks is a substantial component of the public manager, but more time and effort is spent in the home agency (Agranoff & McGuire, 2003; Thomas, 2003). That is, we would expect that overall, a manager would report the frequency of usage of leadership behaviors to be relatively higher in the agency than in the network. However, a comparison of frequencies is problematic since the respondents would report greater usage of the single-agency leadership behaviors across the board. A true comparison must account for this difference in overall activity by taking into consideration the mean of total activity and the standard deviation of the activity in each setting. Standardizing the usage scores for each behavior in the two settings is thus needed. The final result is a value, which we call a “standardized network mean” or “standardized agency mean” for each of the 35 behaviors, that enables us to compare the frequency of usage of the behaviors while controlling for overall activity.<sup>2</sup>

We compare the standardized network mean for each behavior with the standardized agency mean for the same behavior in two ways: establishing the difference in ranking of the behaviors and performing a paired-sample difference of means test for each comparison. Table 3 displays these comparisons. To illustrate, the first row in the table shows that *treating all as equals* is a people-oriented behavior (P), and displays the standardized value of the mean for the network behavior (1.1524), the ranking of that behavior in networks (1, per Table 2), the standardized value of the mean for the agency behavior (1.1169), the ranking of that behavior in agencies (3), the difference between these rankings (+2), the *t*-score (3.144), and the significance level (.002) of a paired-sample difference of means test. The greater the absolute value of the rank difference, the greater the difference in frequency of usage in each setting. Positive values of the rank difference mean that the network mean is ranked higher for that particular behavior than the agency mean. In this case, since the *treating all as equals* behavior is ranked first for the network setting and third for the agency setting, the difference is +2.

<sup>2</sup> In order to accurately compare behavior across settings, we converted each behavior frequency to a mean of one and then accounted for the percentage of the standard deviation over or under this mean. First, we calculated the difference between the individual behavior mean and the total activity mean for each behavior in each setting, and then divided that difference by the standard deviation of total activity. We then multiplied that figure by the percentage of the total activity that is one standard deviation and added that resulting calculation to one.



**Table 3**  
Difference tests of standardized network and agency means.<sup>a</sup>

Leadership behaviors	Type of behavior <sup>b</sup>	Std. network mean <sup>c</sup>	Network rank	Std. agency mean <sup>c</sup>	Agency rank	Rank difference	t-score	Sig.
Treating all as equals	P	1.1524	1	1.1169	3	+2	3.144	.002
Freely sharing information	P	1.0980	2	1.0781	6	+4	1.868	.062
Looking out for the personal welfare	P	1.0891	3	1.1283	2	-1	-3.634	.000
Creating trust	P	1.0638	7	1.0453	12	+5	1.783	.075
Brainstorming	P	1.0569	11	1.0393	15	+4	1.829	.068
Permitting to use own judgment	P	1.0543	12	1.0489	10	-2	.507	.612
Sharing leadership role	P	1.0455	13	.9814	25	+12	5.361	.000
Inspiring enthusiasm for a project	P	1.0417	15	1.0196	18	+3	2.235	.026
Putting suggestions into operation	P	1.0379	16	1.0011	21	+5	3.687	.000
Maintaining a closely knit agency/network	P	1.0335	17	1.0351	16	-1	.148	.883
Permitting to set its own pace	P	.9752	23	.9355	29	+6	3.616	.000
Settling conflicts when they occur	P	.9081	31	.8859	33	+2	1.873	.062
Using incentives to motivate	P	.7841	34	.7671	34	-	1.456	.146
Taking charge when emergencies arise	T	1.0613	8	1.0954	5	-3	-3.072	.002
Letting all know what is expected of them	T	.9980	19	1.0417	13	-6	-3.609	.000
Making sure individual roles are understood	T	.9904	20	1.0071	20	-	-1.455	.146
Scheduling the work to be done	T	.9721	24	1.0566	9	-15	-6.905	.000
Asking to follow standard rules and regulations	T	.9638	26	.9844	23	-3	-1.656	.098
Coordinating the work	T	.9594	27	.9480	27	-	.865	.387
Establishing agreement on nature of tasks	T	.9562	28	.8865	32	+4	7.166	.000
Keeping work moving at a rapid pace	T	.9259	29	.9295	30	+1	.365	.716
Assigning to particular tasks	T	.9233	30	1.0322	17	-13	-8.082	.000
Selecting performance measures	T	.9075	32	.9426	28	-4	-2.918	.004
Deciding how tasks will be performed	T	.8980	33	.9713	26	-7	-6.496	.000
Encouraging support from superiors	O	1.0885	4	1.0656	8	+4	2.259	.024
Identifying resources	O	1.0828	5	1.0739	7	+2	.959	.338
Keeping in good standing with higher authority	O	1.0816	6	1.1295	1	-5	-4.373	.000
Encouraging support from stakeholders	O	1.0600	9	1.0471	11	+2	1.329	.185
Keeping in good standing with stakeholders	O	1.0600	9	1.1116	4	-5	-4.953	.000
Identifying stakeholders	O	1.0436	14	1.0411	14	-	-.253	.800
Establishing a shared vision	O	1.0322	18	.9928	22	+4	4.293	.000
Establishing member commitment to mission	O	.9809	21	.9844	23	+2	-.308	.758
Publicizing goals and accomplishments	O	.9771	22	.9020	31	+9	7.412	.000
Influencing values and norms	O	.9664	25	1.0101	19	-6	-3.939	.000
Changing the network's structure	O	.7303	35	.6644	35	-	5.878	.000

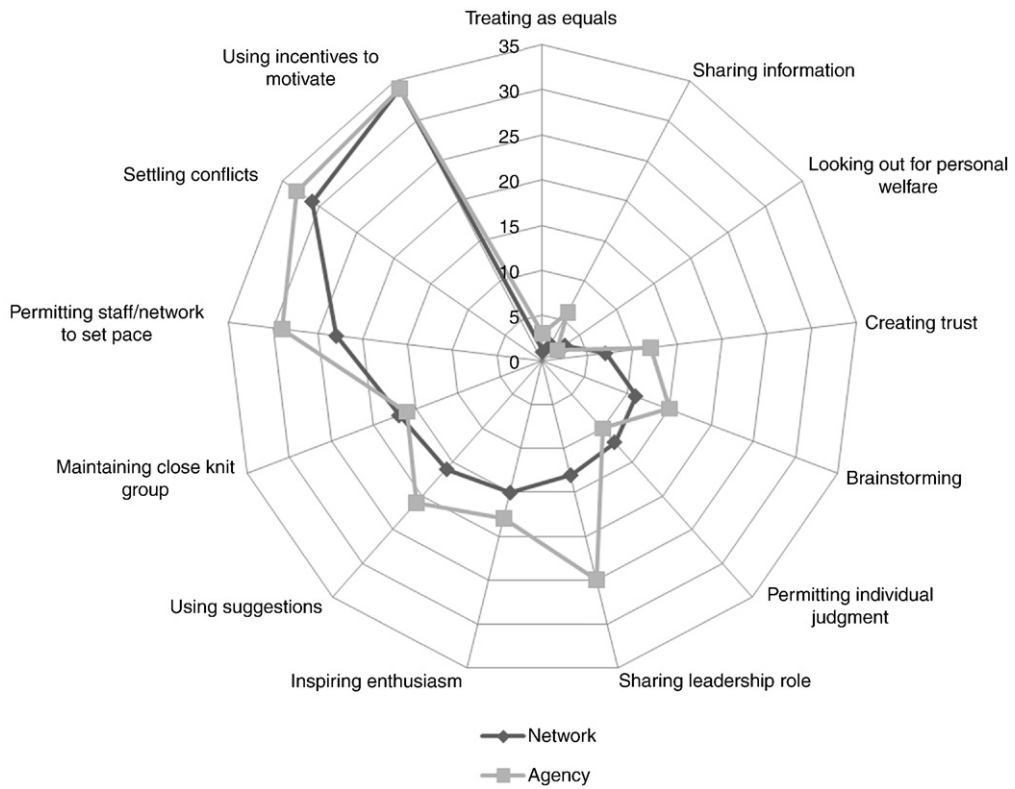
<sup>a</sup> N = 417.

<sup>b</sup> P = People-oriented behaviors; T = Task-oriented behaviors; O = Organization-oriented behaviors.

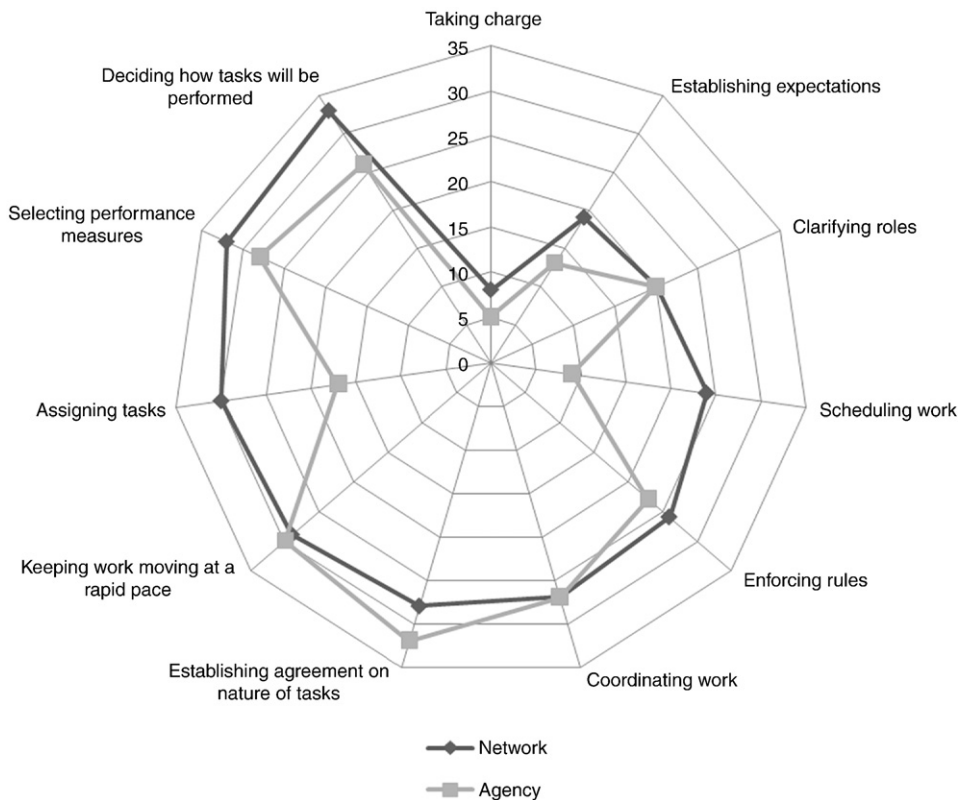
<sup>c</sup> Means were standardized to facilitate comparison.

The differences in leadership behavior across settings are stark. The last column in Table 3 clearly shows that there are more statistically significant differences across settings than there are similarities. Indeed, the most important differences appear to be on the key network behaviors discussed in the previous section. For example, although both are ranked at or near the top, there is a statistically significant difference ( $t$ -score = 3.144) in the frequency of the first people-oriented behavior listed, *treating all as equals*. Similarly, *creating trust*, another people-oriented behavior, is frequently acted on in each setting, but it is ranked higher in the network setting (+5) and is statistically significantly larger in the frequency of usage ( $p = .075$ ). The people-oriented behavior *sharing leadership role* is ranked just 25th for the agency setting, but ranked 13th for the network setting, which is a difference of +12. Also, the  $t$ -score for the paired-sample difference of means test is 5.361 (significant at  $p < .001$ ). This finding is consistent with a truism of network and collaboration theory, which is that leading a network often means sharing that role at various times with various network members (Gray, 1989; Chrislip & Larson, 1994). Overall, the "rank difference" column for the people-oriented behaviors shows that almost across the board, such behaviors are used more frequently in network settings than in single-agency settings (as indicated by the positive rank differences).

Equally convincing regarding the differences in leadership are the behaviors used more frequently in single-agency settings (i.e., those behaviors with a negative rank difference in Table 3). In particular, task-oriented behaviors are used more frequently in agencies. In our study, *letting all know what is expected of them*, ranked 19th for networks, is ranked 13th for agencies and is practiced significantly more frequently in agencies ( $t$ -score = -3.609). Similarly, *deciding how tasks will be performed*, ranked 33rd in networks, is a behavior that is utilized significantly more frequently in single-agency settings ( $t$ -score = -6.496). The behaviors *scheduling the work to be done* (ranked 24th in networks) and *assigning to particular tasks* (ranked 30th in networks) are also performed far more frequently in agencies. The  $t$ -scores for the paired-sample difference of means test are -6.905 and -8.082 respectively. Van Wart's (2005) study of supervisors and executives in the U.S. federal government produces similar findings. In his analysis of 1763 supervisors and 3516 executives, task-oriented behaviors were listed most among the top 20 competencies for supervisors operating in their home agency.



**Fig. 1.** Spider web chart depicting the comparison of people-oriented behavior rankings in networks and agencies. Note: The scale on the spider web chart indicates the behavior's frequency ranking from 1 to 35.



**Fig. 2.** Spider web chart depicting the comparison of task-oriented behavior rankings in networks and agencies. Note: The scale on the spider web chart indicates the behavior's frequency ranking from 1 to 35.

As is the common wisdom in network theory, leaders of networks cannot, and we have evidence that they do not, command their fellow network members to carry out specific tasks. Networks still “require some form of organization, operating rules, routines, and so on” (Agranoff, 2006, 58), but our data indicate that these are not specified by a single leader. Previous case study research found that much of the administrative burden of networks is carried out by “old-fashioned volunteering or stepping up” (Agranoff, 2003, 29), not by ordering network members to perform a task in a specific way.

As shown in Table 3, there also are some similarities between network-level behavior and single-agency behavior, mainly among the organization-oriented behaviors. For example, the organization-oriented behavior *identifying resources*, which is ranked fifth for the network and seventh for the agency, is not significantly different ( $t$ -score = .959) across settings and the rank difference is just +2. As both the bureaucratic politics and network literature argues, all leaders in any setting are seeking resources. The lack of a statistically significant or rank difference for this behavior is not surprising. Also, *encouraging support from stakeholders* (network mean ranked ninth, agency mean ranked eleventh) and *identifying stakeholders* (both means ranked fourteenth) are behaviors that are apparently performed with roughly equivalent frequency across settings. However, one organization-oriented behavior that shows up in the network literature as being important for legitimizing the network is *publicizing goals and accomplishments* (Milward & Provan, 2006). Our data confirm that although it is not highly ranked for the network setting (22), the frequency of usage of this behavior is significantly greater ( $t$ -score = 7.412) than in single-agency settings.

Figs. 1–3 graphically depict the rank differences for each of the 35 leadership behaviors as organized by these three categories. Each square in the figures represents one behavior as labeled. The closer a square is to the center of each diagram, the higher the ranking for that particular behavior (from 1 to 35). The dark squares represent the rankings for network means and the lighter squares represent the rankings for the agency means. Like in a traditional line graph, the lines between the squares show general trends. Unlike a line graph, however, the advantage of a “spider web” chart is its ability to provide a true picture of the differences across contexts, in this case networks and agencies.

Fig. 1 depicts the rankings of the 13 people-oriented behaviors in each context. The dark lines representing the network mean rankings lie, for the most part, within the light lines representing the agency mean rankings. This suggests that people-oriented behaviors appear to be more “central” to the network leader. Aside from just a few behaviors (e.g., *permitting individual judgment*), people-oriented behaviors are ranked higher (i.e., located closer to the middle) in networks than in agencies. Fig. 2 suggests just the opposite for task-oriented behaviors. The light-lined shape is much closer to the middle of the spider web than the dark-lined diagram. Just one task behavior, *establishing agreement on nature of tasks*, is ranked higher in networks. Given the wording of the

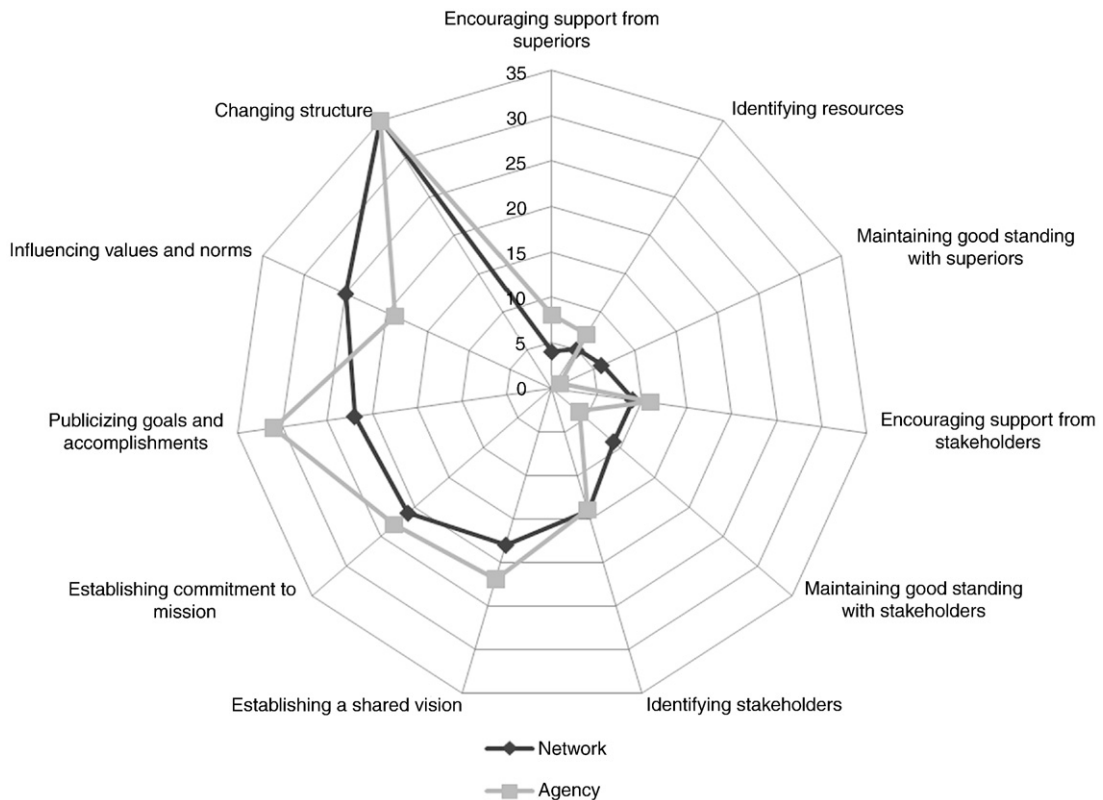


Fig. 3. Spider web chart depicting the comparison of organization-oriented behavior rankings in networks and agencies. Note: The scale on the spider web chart indicates the behavior's frequency ranking from 1 to 35.

behavior—agreement—this is hardly surprising. Fig. 2 demonstrates that the 11 task-oriented behaviors are much more central to leadership in agencies compared to networks. With regard to the 11 organization-oriented behaviors, Fig. 3 depicts a mixed bag; no clear pattern exists, as is indicated by the fact that not one of connected lines lie inside the other (as in the people-oriented and task-oriented charts). It appears that the practice of organization-oriented behavior, which deals with the external environment and the internal culture, is equally frequent in networks and agencies. Overall, the three figures provide a pictorial representation of the information in Table 3 and offer stark evidence of the differences across contexts.

## 8. Discussion

Our purpose was to answer a simple question with empirical methods not used in previous research. That question, which has permeated public management research for several decades, is: Does an “integrative” leadership exist? Addressing that question first required a description of leadership in multi-actor, multi-sector settings, but also, perhaps most important, an examination of whether such leadership was different from leadership in traditional, single-agency contexts. Comparative case study research has generated theory that suggests leadership is different in multi-actor settings such as networks (Agranoff, 2007; Provan & Milward, 1995). Theories and speculation abound that assert networks are fundamentally different from organizations, thus managing (and leading) networks must be different as well (6, P., Goodwin, Peck & Freeman, 2006; Kickert, Klijn, & Koppenjan, 1997). Recommendations have recently been offered for improving collaborative operations through more effective management and leadership (Agranoff, 2006; Bryson, Crosby, & Stone, 2006; Chen, 2008; Chrislip, 2002; McGuire & Agranoff, 2007).

While this previous theory-building informs our analysis, we approach it merely from the perspective of a testable hypothesis rather than a fact. The dataset we used to test the general hypothesis about the existence of true integrative leadership is large, quantitative, and relies on the responses of leaders who actually operate in both collaborative and single-agency settings. The unique design of the methodology enabled us to ask these leaders—receiving answers from 417 of them—how they lead in each context. The comparison was made by the leader him or herself.

Our findings depict a leader of networks who is integrative. Emergency managers take it upon themselves to approach network members as equals, share information across the network, share leadership roles, create trust, and be mindful of the external environment to identify resources and stakeholders. Integrative leaders are less apt to be task masters, generally eschewing making task assignments, setting expectations, and scheduling work to be done in the network. These findings provide empirical confirmation for some of the conventional wisdom about networks.

In addition to offering a description of leadership in multi-actor, multi-sector settings, we addressed the other critical issue of whether or not the integrative leader portrayed by the respondents to the survey behaved any differently within his or her home agency. The answers offered up by the emergency managers again is yes, there are differences. In 24 of the 35 behaviors, a paired-sample difference of means test revealed statistically significant differences in the frequency of behavior between the two settings. The rank differences displayed vividly in Figs. 1–3 show that some leadership behaviors are more central to integrative leadership while others are more central to agency leadership.

It appears that we can reject the null hypothesis of “no difference” between the two types of leadership, but there is additional work to be done in the future. Now that it has been established in a large study just what integrative leadership is in behavioral terms, there are issues regarding the effectiveness of leadership that must be addressed. Are some behaviors more critical than others? That is, is the effectiveness of a network associated with a few specific actions? Can effectiveness be predicted by the three categories of leadership behaviors posited by Van Wart (2008) and adopted in this study? Or are there other, county- or agency-specific factors that are associated with effectiveness? Also, a study like this should be replicated to include public sector leaders from other policy areas. In many ways, emergency management is an ideal context within which to examine the general forces of collaboration: The leaders operate in networks extensively, they employ staff, and they are recently becoming a much more professionalized public management field. If emergency managers behave as integrative leaders, certainly other public managers must as well. Do leaders from social services, economic development, housing, public health, education, or natural resources behave differently than do emergency managers?

The practice and application of integrative leadership has heretofore outpaced our understanding of it. In an attempt to resolve this issue, this paper has provided one of the first in-depth examinations of leadership in multi-actor, multi-sector settings. The large sample and research design has enabled us to make definitive statements about integrative leadership, but many pieces of the puzzle remain. It is hoped that our findings induce additional integrative leadership research.

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## References

- 6, P., Goodwin, N., Peck, E., & Freeman, T. (2006). *Managing networks of twenty-first century organisations*. New York: Palgrave Macmillan.
- Agranoff, R. (2003). *Leveraging networks: A guide for public managers working across organizations*. IBM Endowment for The Business of Government.
- Agranoff, R. (2006). Inside collaborative networks: Ten lessons for public managers. *Public Administration Review*, 66(s1), 56–65.
- Agranoff, R. (2007). *Managing within networks: Adding value to public organizations*. Washington, DC: Georgetown University Press.
- Agranoff, R., & McGuire, M. (1999). Managing in network settings. *Policy Studies Review*, 16(1), 18–41.
- Agranoff, R., & McGuire, M. (2001). Big questions in public network management research. *Journal of Public Administration Research and Theory*, 11(3), 295–326.



- Agranoff, R., & McGuire, M. (2003). *Collaborative public management: New strategies for local governments*. Washington D.C.: Georgetown University Press.
- Allison, G. (1988). Public and private management: Are they fundamentally alike in all unimportant respects? In R. Stillman (Ed.), *Public administration concepts and cases* (pp. 283–298). 4th ed. Boston: Houghton Mifflin.
- Brass, D. J., Galaskiewicz, J., Greve, H. R., & Tsai, W. (2004). Taking stock of networks and organizations: A multilevel perspective. *Academy of Management Journal*, 47(6), 795–817.
- Bryson, J. M., Crosby, B. C., & Stone, M. M. (2006). The design and implementation of cross-sector collaborations: Propositions from the literature. *Public Administration Review*, 66(s1), 44–55.
- Chen, B. (2008). Assessing inter-organizational networks for public service delivery: A process-perceived effectiveness framework. *Public Performance and Management Review*, 31(3), 348–363.
- Chrislip, D. D. (2002). *The collaborative leadership fieldbook: A guide to citizens and civic leaders*. San Francisco: Jossey-Bass.
- Chrislip, D. D., & Larson, C. E. (1994). *Collaborative leadership*. San Francisco: Jossey-Bass.
- Crosby, B. C., & Bryson, J. M. (2005). *Leadership for the common good: Tackling public problems in a shared power world*, 2nd ed. San Francisco: Jossey-Bass.
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly*, 84(2), 242–261.
- Ferguson, R. F., & Stoutland, S. E. (1999). Reconceiving the community development field. In R. F. Ferguson, & W. T. Dickens (Eds.), *Urban problems and community development* (pp. 33–75). Washington, D.C.: Brookings Institution Press.
- Fernandez, S. (2008). Examining the effects of leadership behavior on employee perceptions of performance and job satisfaction. *Public Performance and Management Review*, 32(2), 175–205.
- Feyerherm, A. (1994). Leadership in collaboration: A longitudinal study of two interorganizational rule-making groups. *The Leadership Quarterly*, 5(3–4), 253–270.
- Fleishman, E. A. (1953). The description of supervisory behavior. *Journal of Applied Psychology*, 37(1), 1–6.
- Friedrich, T. L., Byrne, C. L., & Mumford, M. D. (2009). Methodological and theoretical considerations in survey research. *The Leadership Quarterly*, 20, 57–60.
- Goldsmith, S., & Eggers, W. D. (2004). *Governing by network: The new shape of the public sector*. Washington, D.C.: Brookings Institution Press.
- Gray, B. (1989). *Collaborating: Finding common ground for multiparty problems*. San Francisco: Jossey-Bass.
- Human, S. E., & Provan, K. G. (2000). Legitimacy building in the evolution of small-firm multilateral networks: A comparative study of success and demise. *Administrative Science Quarterly*, 45(2), 327–365.
- Huxham, C. (2003). Theorizing collaboration practice. *Public Management Review*, 5(3), 401–423.
- Huxham, C., & Vangen, S. (2000). Leadership in the shaping and implementation of collaboration agendas: How things happen in a (not quite) joined-up world. *Academy of Management Journal*, 43(6), 1159–1175.
- Innes, J. E., & Booher, D. E. (1999). Consensus building and complex adaptive systems: A framework for evaluating collaborative planning. *Journal of the American Planning Association*, 65(4), 412–423.
- Katz, R. L. (1955). Skills of an effective administrator. *Harvard Business Review*, 33(1), 33–42.
- Kickert, W. J. M., & Koppenjan, J. F. M. (1997). Public management and network management: An overview. In W. J. M. Kickert, E. -H. Klijn & J.F.M. Koppenjan (Eds.), *Managing complex networks* (pp. 35–61). London: Sage Publications.
- Kickert, W. J. M., Klijn, E. -H., & Koppenjan, J. F. M. (Eds.). (1997). *Managing complex networks*. London: Sage Publications.
- Kiefer, J. J., & Montjoy, R. S. (2006). Incrementalism before the storm: Network performance for the evacuation of New Orleans. *Public Administration Review*, 66(s1), 122–130.
- McEntire, D. A. (2002). Coordinating multi-organisational responses to disaster: Lessons from the March 28, 2000, Fort Worth tornado. *Disaster Prevention and Management*, 11(5), 369–379.
- McGuire, M. (2002). Managing networks: Propositions on what managers do and why they do it. *Public Administration Review*, 62(5), 599–609.
- McGuire, M. (2003). Is it really so strange? A critical look at the “network management is different from hierarchical management” perspective. *Presented at the Seventh National Public Management Research Conference, Washington, D.C., October 9–11, 2003*.
- McGuire, M. (2006). Collaborative public management: Assessing what we know and how we know it. *Public Administration Review*, 66(s1), 33–43.
- McGuire, M., & Agranoff, R. (2007). Answering the big questions, asking the bigger questions: Expanding the public network management empirical research agenda. *Presented at the Public Management Research Association Conference, Tucson, AZ, October, 25–27, 2007*.
- McGuire, M., & Silvia, C. (2009). Does leadership in networks matter? Examining the effect of leadership behaviors on managers' perceptions of network effectiveness. *Public Performance and Management Review*, 33(2), 179–206.
- McGuire, M., & Silvia, C. (2010). The effect of problem severity, managerial and organizational capacity, and agency structure on intergovernmental collaboration: Evidence from local emergency management. *Public Administration Review*, 70(2), 279–288.
- Meier, K. J., & O'Toole, L. J. (2003). Public management and educational performance: The impact of managerial networking. *Public Administration Review*, 64(3), 363–371.
- Milward, H. B., & Provan, K. G. (2006). *A manager's guide to choosing and using collaborative networks*. IBM Center for the Business of Government.
- Mossberger, K., & Hale, K. (September 2–5, 1999). Information diffusion in an intergovernmental network: The implementation of school-to-work programs. *Paper delivered at the Annual Meeting of the American Political Science Association, Atlanta, Georgia*.
- Moyinhan, D. P. (2005). *Leveraging collaborative networks in infrequent emergency situations*. IBM Center for the Business of Government.
- Nahavandi, A. (2009). *The art and science of leadership*, 5th ed. Upper Saddle River, NJ: Pearson Education, Inc.
- O' Toole, L. J. (1988). Strategies for intergovernmental management: Implementing programs in intergovernmental management. *International Journal of Public Administration*, 11(4), 181–210.
- O'Toole, L. J. (1997). Treating networks seriously: Practical and research-based agendas in public administration. *Public Administration Review*, 57(1), 45–52.
- Paton, D., & Flin, R. (1999). Disaster stress: An emergency management perspective. *Disaster Prevention and Management*, 8(4), 261–267.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Powell, W. W. (1990). Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior*, 12, 295–336.
- Provan, K. G., & Kenis, P. (2008). Modes of network governance: Structure, management, and effectiveness. *Journal of Public Administration Research and Theory*, 18(2), 229–252.
- Provan, K. G., & Milward, H. B. (1995). A preliminary theory of interorganizational effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*, 40(1), 1–33.
- Rainey, H. G. (2003). *Understanding and managing public organizations*, 3rd ed. San Francisco: Jossey-Bass.
- Rainey, H. G., Backoff, R. W., & Levine, C. L. (1976). Comparing public and private organizations. *Public Administration Review*, 36(2), 233–246.
- Salamon, L. M. (2002). *The tools of government*. Oxford: Oxford University Press.
- Termeer, C. J. A. M., & Koppenjan, J. F. M. (1997). Managing perceptions in networks. In W. J. M. Kickert, E. -H. Klijn & J.F.M. Koppenjan (Eds.), *Managing complex networks* (pp. 79–97). London: Sage Publications.
- Thomas, C. W. (2003). *Bureaucratic landscapes: Interagency cooperation and the preservation of biodiversity*. Cambridge, MA: MIT Press.
- Thomson, A. M., & Perry, J. L. (2006). Collaboration processes: Inside the black box. *Public Administration Review*, 66(s1), 20–32.
- Van Wart, M. (2003). Public-sector leadership theory: An assessment. *Public Administration Review*, 63(2), 214–228.
- Van Wart, M. (2004). A comprehensive model for organizational leadership: the Leadership Action Cycle. *International Journal of Organization Theory and Behavior*, 7(2), 173–208.
- Van Wart, M. (2005). *Dynamics of leadership in public service: Theory and practice*. Armonk, New York: M.E. Sharpe.
- Van Wart, M. (2008). *Leadership in public organizations: An introduction*. Armonk, New York: M.E. Sharpe.
- Waugh, W. L. (1994). Regionalizing emergency management: Counties as state and local governments. *Public Administration Review*, 54(3), 253–258.
- Waugh, W. L., & Streib, G. (2006). Collaboration and leadership for effective emergency management. *Public Administration Review*, 66(s1), 131–140.



- Williams, P. (2002). The competent boundary spanner. *Public Administration*, 80(1), 103–124.
- Wise, C. R. (2006). Organizing for homeland security. *Public Administration Review*, 62(2), 131–144.
- Wood, D., & Gray, B. (1991). Toward a comprehensive theory of collaboration. *Journal of Applied Behavioral Science*, 27(2), 139–162.
- Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9(2), 141–159.