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Pathways of Representation in Network Governance: Evidence from Multi-Jurisdictional Disasters

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Abstract

Governance systems reconcile diverse interests to enable collective decision-making and action. Questions related to representation in the governance of networks are addressed in the literature; underexplored is the empirical variation in governance arrangements and pathways of representation. Complex, multi-jurisdictional disasters provide a robust theoretical and empirical context in which to investigate network governance pathways due to the tensions between democratic principles of representation and the need for timely, expert-informed response actions. In this article, we address three questions related to network governance, representation, and complex disasters: what governance structures allow for a representation of diverse interests? What governance structures provide a perception of voice to key affected parties? And where do we see variation in the kinds of structures that give voice to these entities? Using an inductive, grounded theory approach along with mixed methods that include case studies, interviews, and archival data in the form ICS 209 incident reports, we provide evidence from 10 of the most jurisdictionally complex wildfires that took place in 2017. In doing so, we introduce the distinction between macro and micro structures of network governance for understanding more precisely the pathways by which representation occurs and how representation functions in disaster networks. There is no singular normative goal when we think about network governance and representation in disasters; rather there are competing contingencies that emerge out of complex contexts. We propose four key propositions to guide further work in this arena.

Introduction

In this article, we investigate the application of formal and informal structures of network governance, institutionalized within the national incident command system (ICS), and implemented during complex, multi-jurisdictional disasters. Our aim is to understand the efficacy of these structures in enabling diverse jurisdictional actors, impacted by an incident, to have voice in the governance of the incident during the response phase of a disaster. In doing so, this article seeks to both advance our understanding of

how structural features of governance arrangements in networks enabled or impeded representation and reconciliation of diverse interests, as well as expand our knowledge of the ICS as a system of network governance.

Complex disasters are inherently a networked phenomenon (Ansel et al. 2010; Kapucu et al. 2010; Nowell et al. 2018a) involving a myriad of legally autonomous actors with various jurisdictional responsibilities (Nowell and Steelman 2013, 2019). As such, they are an information-rich setting for understanding

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network governance in jurisdictionally complex environments. Described in more detail below, we refer to network governance *as the structural arrangements implemented within networks for the purpose of representing and reconciling diverse interests into a coherent course of action toward the accomplishment of common goals*. This definition is aligned with, and yet more narrow in its structural focus than Klijn and Koppenhan's (2015: 8) conception of network governance as governance efforts that take place within networks. We follow the work of Provan and Kenis (2008) and Jones, Hesterly, and Borgatti (1997) in our focus on structural arrangements, but we depart from these definitions by conceptualizing network governance as consisting of *both* formal (Provan and Kenis 2008) as well as informal, that is, non-contractual structures (Jones et al. 1997).

In this article, we argue that representation is a useful analytical lens for advancing our understanding of governance in messy networks. Nowell et al. (2018a, b) describe messy networks as networks in which the boundaries that define which actors are relevant to the network look different depending on your perspective and/or position within the network and can change over time in response to changing conditions on the ground. The question of representation in disasters is particularly interesting as it turns on the theoretical tension between the competing demands to represent diverse interests and the urgency to take decisive action in the face of impending threat ('t Hart et al. 1993). On the one hand, effective disaster governance recognizes the diverse and often contending priorities among stakeholders and requires governance systems for appropriately representing the varied interests of those affected by the disaster (Choi and Brower 2006; Waugh and Streib 2006). On the other hand, disasters are distinguished from other network governance contexts in the need to take timely action to avoid loss of life, property, and other values (Moynihan 2008a, b; Waugh and Streib 2006). Put simply, there is generally no time for lengthy deliberation fundamental to many conceptions of governance in institutionally complex environments (Ansel et al. 2010). In governance parlance, this means striking a balance between the lateral coordination required to represent the multiple actors affected by a disaster with the hierarchical command structures invoked to manage the disaster.

In disaster contexts, the response network is generally conceptualized as the collection of institutional actors with responsibilities and capabilities to respond to the incident (Kapucu et al. 2010). However, the sprawling nature of response means network governance is not monolithic, rather, there are multiple governance structures involving different parts of the network that evolve over time in response to changing conditions on the ground (Nowell and Steelman 2019). Questions related to representation within this negotiation are of utmost importance to the legitimacy and efficacy of the network. Existing literature on network governance arrangements such as lead organization, network administrative organizations, and member-led networks (e.g., Provan and Kenis 2008) were developed in the context of purpose-oriented networks (Carboni et al. 2019) and assume a monolithic system of governance that pertains to the network as a whole. As such, they have limited relevance to multi-jurisdictional disasters characterized by multiple formal and informal governance arrangements dispersed throughout the network. There is a dearth of scholarship aimed at understanding network governance arrangements and their consequences for representation within this type of institutionally complex environment. Understanding the interplay between network governance structures and their consequences for representation is key to advancing a more robust theory of governance in messy networked environments.

This article seeks to address this gap, examining issues of representation and voice in network governance structures as outlined and implemented during disasters through the national ICS in the United States. In this article, we address three questions: what governance structures allow for a representation of diverse interests in disaster response networks? How do these structures perform in their ability to facilitate a perception of voice to key affected parties? And where do we see variation in the kinds of network structures that give voice to these entities? We do this with an eye toward providing insight into how to think more comprehensively about the role of representation in governing messy networks. We build our case by providing empirical evidence from 10 of the most jurisdictionally complex wildfires that took place in the United States in 2017.

Governance Structures, Hierarichal Bureaucracy, and Networks

Our interest is in the structures that enable the governance of networks during disasters and how these structures perform in regards to enabling perceptions of voice. The term governance suggests that entities beyond public agencies are important to defining, implementing, and securing socially desirable outcomes. While there are many definitions of governance across many disciplines (Ansell and Torfing 2016; Treib et al. 2007), we focus here on *the structures and interactive processes that steer society toward common goals* (Ansell and Torfing 2016, 4). In particular, we draw attention to the continuum between hierarchies and networks.

Bureaucratic forms of governance rest on rules, procedures, formal authority, span of control, oversight, and accountability (Weber 1922). Emerging out of the Progressive era with a focus on Taylorism, bureaucratic forms of governance brought organization, productivity, and routinization to the fore in a newly modernizing world. Implied within these forms of governance are the notion of technocracy with expertise-driven elites at the helm directing efficient processes.

Network forms of governance emerge in polycentric contexts typified by interdependency in social relationships through both formal (i.e., contracts, agreements) and informal mechanisms (i.e., trust, reciprocity, and cooperation) (Powell 2003). Network forms are essential in situations where no over-arching authority exists and collaboration is needed to accomplish a given goal. Network forms of governance gained popularity in reaction to the complexities arising out of wicked social problems in the 1980s and 1990s, and the necessities of looking beyond the public sector to address these problems given waning social welfare states (Koppenjan and Klijn 2004; Rhodes 1990). Implied in the notion of network governance is a broadening of the actors, beyond traditional technocrats, who might participate in governance decisions (Sørenson and Torfing 2007).

Principal-agent relationships are hierarchical, whereas network relationships are lateral. We argue in order to understand network governance on disasters, you need to understand both the nature of principals and their delegated agents as well as where lateral negotiation of interests occurs. The principal has authority to dictate objectives, and agents are socially and contractually obligated to advance the objective and interests of the principal (Eisenhardt 1989). Failure to fulfill the contract can result in termination of the agent from the services of the principal. On the other end of the continuum, networked relations exist when there are no obvious sovereigns, each actor is its own principal in relation to their domain of responsibility and has considerable autonomy to act unilaterally if they so choose.

Governance rests in the domain between the *process* of organizing and the *structures within which organizing occurs* (Bryson et al. 2015). Network governance is described as "a multi-layered system of shared sovereignty" (Sørensen 2002, 696) in which a variety of different actors, structured by different institutional arrangements, participate (Carlsson and Sandström 2008). This notion closely aligns with conceptions of collaborative governance which has been described as "the processes and structure of public policy decision-making and management that engage people constructively across the boundaries of public

agencies, levels of government, and/or the public, private, and civic spheres to carry out a public purpose that could not otherwise be accomplished" (Emerson et al. 2012: 2). The relationship between network governance and collaborative governance is further highlighted by Kenis (2016: 155) who describes network governance as reflecting "the internal mechanics of a collaborative governance instances. The distinction between the concepts of collaborative governance and network governance is the subject of some debate in the literature (Kapucu et al. 2013). However, in general, investigations into network governance emphasize the structural arrangements that enable (or impede) the aspirational collaborative processes that are frequently of central interest to scholars of collaborative governance. As such, the two literatures are highly complementary.

Accordingly, we will use the term structures of network governance to refer to institutionalized arrangements that enable network actors to reconcile competing interests, coordinate action, and pursue common goals. In the United States, structures of network governance for managing disasters are part of the ICS. ICS is comprised of a set of tools as well as practical guidance for effective incident management (Jensen and Thompson 2016; Moynihan 2009), including tools for setting up structures of network governance on multi-jurisdictional incidents. These tools are necessary because division of power and authority is woven into the American and other federalist systems by design, thus networked relations are a natural consequence. For example, despite the misleading term "incident command," in reality, there is generally no jurisdiction that has legal authority to "command" a jurisdictionally complex incident in its entirety (Buck et al. 2006; Nowell et al. 2018a; Nowell and Steelman 2019). Because multi-jurisdictional disasters affect numerous geographic and functional boundaries, this raises questions of who is in charge or who gets to be represented within the governance structure (Nowell and Steelman 2019). However, the need for timely and decisive action during disasters remains crucial ('t Hart et al. 1993). As a result, ICS has evolved in the United States into an elaborate set of governance tools aimed at accommodating multiple lateral actors while preserving a hierarchical command and control structure. While important, this discussion neglects a more fundamental question of governance: who and what is being represented?

The Challenge of Representation in Network Governance

We define representation as "…. a process in which an actor through political battles obtains the legitimate

right to construct the identity of the represented, and make political decisions with reference to this identity" (Sørenson 2002, 698). Issues of representation are of growing interest in the network governance literature (Sørensen 2002; Sørensen and Torfing 2009; Klijn and Koppenjan 2012).

Implied in representative governance is the promise of voice as part of the normative dimensions of democratic process (Tyler and Lind 2001).

Inclusive representation of diverse interests has been a theoretical cornerstone in both the collaborative (Ansell and Gash 2007; Emerson and Nabatchi 2015; Johnston et al. 2011; Purdy 2012) and network governance (Klijn and Koppenjan 2012; Provan and Milward 2001; Sørensen 2002; Saz-Carranza and Ospina 2010; Saz-Carranza 2012; Sørensen and Torfing 2009) literatures. Ansell and Gash (2007: 555) specify critical variables for effective collaboration, including institutional design of which access to the process is "perhaps the most fundamental design issue." Failure to be inclusive can affect the legitimacy of collaborative efforts (Beierle and Konisky 2000). Strategies that create greater inclusiveness, including those that target less well-represented members are needed, as are methods that ensure that those who are participating get a fair hearing and roles are clearly delineated (Ansell and Gash 2007: 557). Additionally, collaborative efforts have long recognized the need to make some tradeoffs between greater inclusion and efficient decision-making (Saz-Carranza and Ospina 2010; Scott and Thomas 2018). As the total number of participants increases, the probability of coming to agreement decreases due to sheer differences in preferences as perspectives and transaction costs increase (Carpenter and Kennedy 2001; Feiock 2013; Smaldino and Lubell 2011).

While there is a growing literature focused on representation in networks (e.g., Choi and Robertson 2014; Johnston et al. 2011; Scott et al. 2019), a key limitation of this literature for the present study is it examines the problem of representation as a problem of participation. In other words, this literature examines representation from the perspective of a designer of a collaborative initiative facing the challenge of how to gain stakeholder commitment to engage in a collaborative process. In messy networks, participation can look very different for different stakeholders depending on the governance structures established and whose concerns are privileged in those structures. Our article approaches the challenge of representation from the perspective of the stakeholder and seeks to understand who is granted access to, and influence within, different structures of network governance. Unfortunately, there is a dearth of scholarship investigating the characteristics of structures of network governance as they

relate to issues of access and voice in messy, institutionally complex network environments. Further, we can conceptualize how representation plays out under different network governance structures, but it is imperative to test these concepts against diverse real-world contexts so we can bring our theory into alignment with observed practices (e.g., Rethemeyer and Hatmaker 2008). Accordingly, this approach also suggests the need for a more inductive research design so the evidence can drive the theory insight. Without a deep understanding of practice, we can get ahead of theory in unproductive ways.

Governance, Representation and Disasters

Established in 2004, the National Response Framework and the National Incident Management System standardized emergency response and mandated ICS as the primary mechanism for incident management (Jensen and Waugh 2014). The goal was to clarify and routinize key response-related tasks for more efficient and effective disaster response. The National Incident Management System has historically viewed the challenge of disaster governance as principally a challenge of creating a coordinated and coherent unity of operations among a multitude of units active within the same geographic area. In layperson's terms, it was designed to solve problems such as making sure three engine crews were not assigned to do the same thing in the same place while leaving another area unattended, or to ensure that medical units were working in coordination with search and rescue units to ensure continuity of care for injured persons.

The incident command organizational structure often accomplishes this through a hierarchical model in which all operations are integrated into a divisionalized organizational structure under the command of an incident commander. However, this hierarchical model assumes there is a super-ordinate power who is able to empower an incident command with the authority to direct all units active within a response. For example, in the response to the Oklahoma City bombing, ICS was touted as a success (Buck, Trainer, and Aguirre 2006). However, part of this success was attributed to the limited scale and scope of the disaster which allowed the Oklahoma City Fire Department to retain command of the incident throughout its duration. As such, while the response to the attacks was complex from an operations perspective, it was more straightforward from a jurisdictional perspective and thus meshed well with the hierarchical nature of the incident command organizational structure (Buck et al. 2006).

However, as disasters have increased in scale and complexity, they increasingly spill over jurisdictional boundaries such that there is no single entity with the

legal authority to delegate command of the incident. Rather, this authority is fragmented across a network of different jurisdictional actors, each with the potential for different interests and priorities. Further, since emergent disaster response fit uneasily in a strict bureaucratic hierarchy (Drabek and McIntire 2002; Majchrzak, Jarvenpaa, and Hollingshead 2007), emergence means actors outside the status quo response may need to be considered. This calls into question the modalities of representation, their mechanisms for efficacy when operationalized, and the tradeoffs associated with efficacy and representation. Nowhere is this truer than in the growing scale and complexity of wildfire disasters. Complex, multi-jurisdictional disasters necessitate the use of structures of network governance that allow for the representation of multiple jurisdictions. The ICS has multiple such structures as part of its toolkit. However, which structures get implemented—and how this varies across incidents and often even within incident—changes over time (Jensen and Thompson 2016; Moynihan 2009).

Thinking about network governance and representation in disasters poses unique challenges. During the response phase of a disaster, demands for inclusivity meet head-on with tensions of immediacy in operational decision-making, thereby creating conditions that can preclude voice. In a democracy, one of the defining assumptions is that the "demos" has been established prior to democratic decision-making (Sørensen 2002; Warren 1992). Purpose oriented networks, such as those addressed by Provan and Kenis (2008), easily fit this assumption because they are more readily definable, generally have monolithic governance structures, and typically comprise a group of actors who are clear among themselves about who is or is not in the network. In an emergent disaster network, however, there are often numerous governance structures activated in different parts of the network that change over time, network members may only perceive the portion of the network most readily apparent to them, and the composition of actors changes over time in response to evolving conditions on the ground (Comfort 2007; Drabek and McEntire 2002, 2003; Gardner 2013; Majchrzak, Jarvenpaa, and Hollingshead 2007). This creates unique challenges for disaster response networks, particularly when considered in combination with the messiness associated with determining the network boundary (Nowell et al. 2018a, b), the relatively unpracticed nature of the response (Choi and Brower 2006; Moynihan 2009), and the urgency of disaster response (Moynihan 2009; 't Hart et al. 1993).

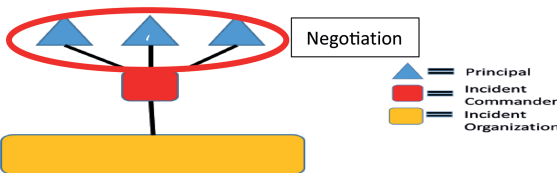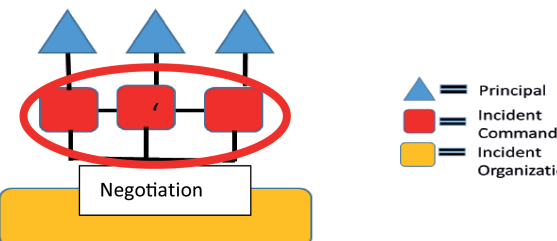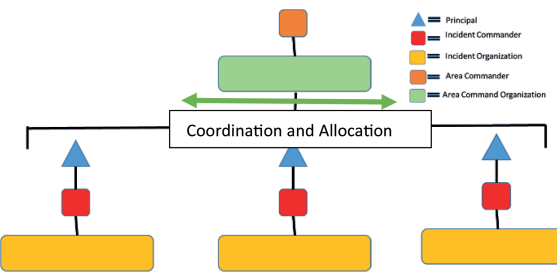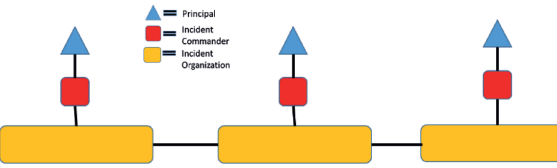There is considerable debate in the literature about ICS and whether it is or is not well suited to representing key stakeholders in jurisdictionally complex disasters. Some scholars find that ICS is flexible and can be broadened to incorporate relevant actors (Auf der Heide 1989, 157; Bigley and Roberts 2001; Hunt, Smith, Hamerton et al. 2014). These scholars suggest ICS, if implemented correctly, can include all key participants under its organizational umbrella. Another group of scholars identify key conditions under which ICS can be expected to work well and when it might be less effective (Buck et al. 2006; Jensen and Waugh 2014; Moynihan 2009). Moynihan (2009: 912) found that there is a bias against inclusiveness under conditions of urgency. The upshot is that there is debate in scholarly circles about the role of ICS and its appropriateness for representing varied interests in a disaster, but we know little about the different options within ICS that accommodate specific interests or their relative degrees of efficacy. To date, there has been limited empirical scholarship that systematically assesses the efficacy of different ICS network governance structures as they related to representation and voice.

Macro Structures of Network Governance on Disasters

There are four major macro structures of network governance within the ICS for integrating autonomous authorities under a single command structure (table 1), all of which entail a combination of hierarchical principal-agent relationships in which authority is delegated by principals to agents as well as lateral relationships through which negotiation of diverse interests occurs. By macro structures, we refer to formally agreed upon governance arrangements established between principals impacted by a disaster for the purpose of cooperatively managing the incident. We use principal agent language to provide a consistent reference for talking about these relationships. A principal agent depiction of relationships allows us to consider who has authority and how it is delegated or given to others. In short, this approach allows us to capture who is representing whom or not. We argue that in order to understand structures of network governance in disasters, an understanding of both hierarchical authority as well as lateral negotiation is crucial.

The first major ICS structure of network governance is a "joint delegation of authority". In this model, multiple principals agree to delegate their respective authority to a single incident commander who agrees to manage their collective interests on their behalf. The incident commander can be viewed as the agent of multiple principals. The principals, either collectively or individually, communicate their interests and objectives that they would like the incident commander to achieve. If limited time or resources requires tradeoffs among objectives, either the incident commander or the principals must then

Table 1. Governance Arrangements on Complex Disasters

Joint Delegation of Authority		The Agency Administrators (principals) jointly delegate authority to an Incident Commander (agents) to manage the incident on their collective behalf.
Unified Command		Each Agency Administrator (principal) delegates decision-making authority to their own Incident Commander (agent). Incident Commanders (agents) negotiate with each other to decide how to manage the incident.
Area Command		Competition over scarce resources and the need to coordinate air and ground tactics may necessitate a super-ordinate entity (Area Command Organization) to facilitate the allocation and distribution of resources among different principals and their associated agents.
Ad Hoc Coordination		Principals with no direct access to formal representation within the incident response organization independently engage with the incident but may coordinate operations and share information formally or informally as needed through the use of coordinating meetings and/or liaisons.

find a way to either reconcile or prioritize among competing interests to chart a clear and coherent strategy.

In a "unified command" form of network governance, each principal may elect to have their own incident commander dedicated to representing that principal's specific interests. However, to create a coherent organization, the incident commanders act as co-directors jointly overseeing the response organization. In the event of competing objectives between principals, the incident commanders must negotiate with each other and come to an agreement about a path forward.

In a third model, principals may elect to erect a response organization dedicated entirely to their interests and objectives. However, to the extent there are proximate operations that may require cooperative resource allocations and operational coordination between response organizations, principals must use additional tools to ensure their operations remain in coordination with other operational areas not under their

command. If multiple operational command efforts begin to compete for scarce resources, tools like "area command" structures can serve as a super-ordinate entity, facilitating the allocation and distribution of resources between different actors. Last, principals active in an incident but with limited resource or operational interdependency with other areas may attempt to coordinate more informally through "ad hoc arrangements" such as the assignment of liaison officers and attendance at meetings.

Micro Structures of Network Governance

Within each of these governance arrangements, some evidence suggests a variety of structures are used to communicate and coordinate among principals as well among their agents, as with other entities not directly represented in the organization (Jensen and Thompson 2016; Moynihan 2008, 2009). We use the term micro structures of network governance to refer to forums and tools that support the negotiation of diverse

interests into a coherent course of action. However, we do not have a comprehensive understanding of what the entire set of structures looks like. If governance is the pathway by which pluralism is managed and integrated into a cohesive set of actions (Sørenson 2002), failure to understand these more micro structures leaves a considerable blind spot how network governance on complex disasters occurs. We argue that these structures are the concrete architecture of network governance on a complex incident.

An inductive approach was necessary to take an inventory of the structures at play in complex disasters and begin to understand and label them for more effective discussion and use. The network governance literature is strong on the theoretical and conceptual descriptions of representation concepts, but weaker on what they look like when operationalized. As such, this article fills this gap by providing empirical evidence related to what the representative mechanisms look like by answering the question: *What are the governance structures that allow for representation of diverse interests on a jurisdictionally complex incident?*

We are further interested in understanding the efficacy of representative mechanisms. Building from the literature on representation in democratic settings, we suggest the normative standard of voice as the basis for evaluating the influence of different network governance structures. The public participation literature suggests that those who are affected by government decisions normatively have a right to participate in the formation of those decisions (Bland and Rubin 1997; Box 1998; Crosby, Kelly, and Schaefer 1986; deLeon 1992; Robbins, Simonsen, and Feldman 2008; Simonsen, Johnston, and Barnett 1996). However, in time-sensitive contexts such as disaster response, desire for direct representation and lengthy deliberation among all parties affected may not be feasible, requiring network governance mechanisms that allow for delegated representation. Regardless of whether representation occurs through direct engagement or delegated authority, the assumption remains that effective network governance requires diverse stakeholders to perceive their voice as represented in the decision-making (Lind and Tyler 1988; Tyler and Lind 1992). This highlights a critical question and gap in the network governance of disasters. Namely, *how does representation in governance structures relate to voice? Do we see variation in structures when it comes to voice?*

Methods

To address these research questions, we needed to identify disaster response networks on large incidents that impacted multiple jurisdictions. Our interest was in the network of jurisdictional land owners whose jurisdictions were affected or significantly threatened by the incident. Because we defined our networks based on jurisdictions affected rather than participation in any one governance structure, it allowed us to ascertain how representation was or was not taking place within the governance structures. We conducted in-depth case studies of ten jurisdictionally complex federal Type 1 wildfire incidents occurring in 2017. Federal Type 1 wildfire incidents refer to incidents requiring the deployment of a Federal Type 1 incident management team (IMT). Federal Type 1 IMTs are elite teams who respond to the most complex and significant incidents nationally. The ten cases selected for inclusion in this study were based on jurisdictional complexity as defined by a wildfire that burned or significantly threatened a large number of jurisdictionally autonomous lands. We were particularly interested in incidents that involved both state and federal landowners as our past research indicated that coordination between levels of government can be more challenging than coordination within the same level of government (Fleming et al. 2015).

For each of the ten cases, we sought key informant interviews with agency administrators or land managers representing each of the major jurisdictions threatened (large private/commercial, local, state, tribal, and federal). This approach allowed us to assess whether those affiliated with the major jurisdictions affected by the fire were represented in the governance of the incident, and if so, how they were represented. In other words, we identified potential informants based not on their role in incident response, but on significant land ownership that was burning or at threat for ignition. We also sought interviews from Type 1 incident commanders assigned to the incident. Interviews took place by phone and were semi-structured in nature. Interviews were approximately 90 minutes. For the present study, key informants were asked to describe their interactions with other land jurisdictions and the IMT during the incident. We probed specifically about when, how and with whom they interacted during the incident with particular attention to attendance at any structured or regular meetings. We also asked key informants to evaluate these interactions and the incident overall in terms of whether they met their expectations and aspirations for how they would like to be involved. Interviews were confidential in keeping with Institutional Review Board approval as part of the human subjects review process (North Carolina State IRB # 12513).

Interviews were conducted with a total of 68 key informants across the 10 incidents. Table 2 summarizes the jurisdictional affiliation of each of the informants.

Table 2. Key Informants by Jurisdiction

	Number of Participants by Jurisdiction	Percentages (%)
Federal	25	37
Local	8	12
Private/ Commercial	16	24
State	17	25
Tribal	2	3
Grand Total	68	100

Analysis of transcribed interviews took place in three phases. First, a comparative case analysis (e.g., Yin 2012) was conducted on each of the 10 incidents. The focus of this analysis was to document the formal network governance structure of the incident response organization that was put in place to govern the wildfire incident. To create this, the network of all public land owners (local, state, federal, tribal) affected or significantly threatened by the wildfire were identified for each incident using both interview data with incident commanders and agency administrators as well as archival data in federal ICS 209 incident reports. Large-scale commercial land owners with significant land holdings impacted or threatened by the wildfire were also identified. A diagrammatic case summary was created for each of the ten incidents analyzed, which outlined bureaucratic relationships that were established through formal network governance arrangements between jurisdictions. These formal arrangements were based on the establishment of joint delegations of authority, unified command, and ad hoc arrangements (per table 1). This analysis allowed us to identify variation in the formal incent management organization that was set up across the incidents.

Second, transcripts were analyzed using an inductive descriptive thematic analysis (Corbin and Strauss 1990) in which text elements described how informants engaged, attempted to engage, or were engaged by principals or their agents representing different jurisdictions affected by the incident. For the present study, all transcripts were initially analyzed with regard to the structures (e.g., meetings, phone calls, liaison officers, delegations of authority) through which informants participated, and by which their interests and concerns were represented, on the incident. These were conceptualized as the structures of network governance. Transcripts were also analyzed for statements indicating sentiments of having or not having adequate voice on the incident. Based on first-order codes, informants were categorized based on whether their transcript reflected dominant sentiments of voice, lack of voice, or mixed. These characterizations were done first based on codes of voice or no voice and then

validated against the transcripts. Last, we examined and peer-reviewed the network governance codes for informants who were viewed as having voice or not having voice.

In a final phase, individual informants' lived experience of voice or no voice during the incident was examined in the context of their structural position within the incident response organization. This analysis allowed us to examine patterns of experience contextualized based on positionality as well in consideration of the case description of what occurred on the incident overall. This analysis resulted in the development of core propositions concerning structures of network governance. Last, using an analytic strategy of discrepancy analysis developed in grounded theory methodology (Corbin and Strauss 1990), we created an in-depth within-person case summary for each informant whose experience did not fully align with the core hypothesis. The intent of this discrepancy analysis was to gain a more nuanced understanding of the core propositions, and identify potential contingencies which delineate the boundary conditions of when these propositions apply. This individual within case summary focused on examining patterning in an informant's history of engagement with other jurisdictions and offered a more detailed account of why this informant felt this engagement did or did not offer them satisfactory voice in decision-making.

Findings

Phase 1: What Network Governance Structures Allow for Representation of Diverse Interests in a Jurisdictionally Complex Incident?

Our initial incident level analysis revealed that network governance on these incidents demonstrated considerable variability in how they structured network relations among jurisdictions. Network governance was further described as consisting of both macro and micro structures through which principals and their agents sought representation. *Macro structures* represent the principals and agents impacted by the incident and their formal relationships with one and other. *Micro structures* are the tools, technologies, and forums through which formal and informal negotiated order is achieved.

Three macro structures were prevalent—ad hoc arrangements, unified command and delegations of authority. Eight of the 10 cases in this study typically employed some type of network governance design involving a combination of joint delegations of authority and unified command. In two cases, the entire incident lacked a formal network governance structure despite numerous jurisdictions being engaged. In other words, there was no joint delegation of authority or

unified command structure formally linking any of the affected or threatened jurisdictions and coordination was carried out in an ad hoc arrangement. Seven incidents used unified command and eight used delegations of authority; these were used in combination on seven incidents. For example, figure 1 represents the macro structure set up to govern an incident we will refer to as the Summit Fire. To maintain confidentiality of the participants in the case studies, we have included this representative example. As shown, this network governance organization consisted of a joint delegation of authority between three federal agencies to a single incident commander who then was tasked to work in unified command with two other incident commanders representing a state and a county jurisdiction. Other jurisdictions involved in the incident were represented only through ad hoc arrangements, and existed outside of formal structural configurations.

We created macro structure maps for each of the 10 incidents in our sample akin to the example laid out in figure 1. Each of the 10 fires possessed a different macro structure. In addition to the variety associated with macro structures, we documented micro structures used to negotiate relationships within the macro structures. Micro structures were the communication modalities employed within the macro structures to coordinate action. Prominent examples of micro structures used to communicate and coordinate included cooperator meetings, planning meetings, morning and evening briefings, Agency Administrator meetings, use of the Liaison Officer, discussions with the Division Supervisor, phone calls, and texts.

Phase 2: To What Extent Does Formal Representation in Network Governance Structures Increase Voice? Do We See Variation in Macro and Micro Structures When it Comes to Voice?

We next wanted to examine perceptions of voice among principals represented under different macro structural arrangements. To understand this, we first needed to categorize where individuals fell within the various macro structures. There were four different ways in which principals could be represented within the macro structure (see table 1 for summary of types). First, they could be represented under a joint delegation of authority in which multiple principals elected to mutually delegate authority to a single agent (incident commander) who managed their collective interest on their behalf. Only two of our informants met this criterion. Second, principals could be represented through unified command in which their interests were being represented by a dedicated agent but that agent managed those interests in joint command with other agents who were likewise representing other jurisdictional interests. Twelve of our informants met this criterion. Third, principals could be represented through a combination of the first two. In these cases, a joint delegation with one or more jurisdictions to a single agent might be present along with a unified command structure with one or more agents representing additional jurisdictions. Twenty-one of our informants were represented in the macro structures under this arrangement. Last, principals could be represented ad hoc through informal coordination with other principals and their agents. Thirty-three of our principals were classified as ad hoc.

Second, we needed to understand who perceived they had voice and who did not. Our data indicated that 47% of the individuals in our sample expressed consistent sentiments of voice, 25% expressed consistent sentiments of having no voice, and 28% expressed mixed sentiments of voice, often expressing voice in one aspect of the incident but not in another or expressing differing sentiments during different time points as the incident unfolded.

The next question we posed was whether we would see variation in the expression of voice based on positionality within the macro structures. Our data indicated that all three macro structures and their combinations can effectively channel voice, although some appeared more problematic than others. 100% of those who were in joint delegation ($n = 2$) and 58% in unified command ($n = 12$) were perceived to have voice (figure 2). Sixty-two percent in a combination of
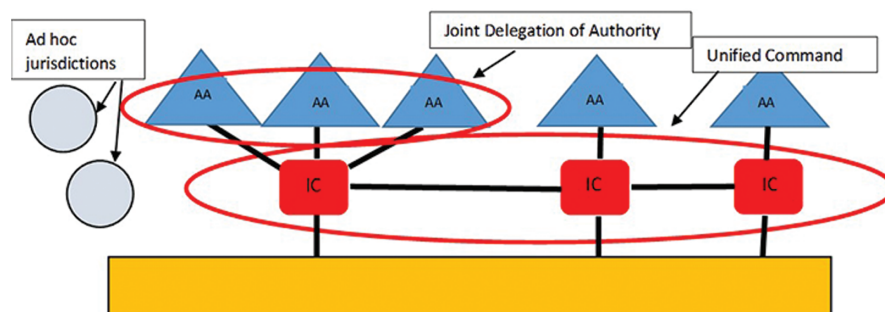

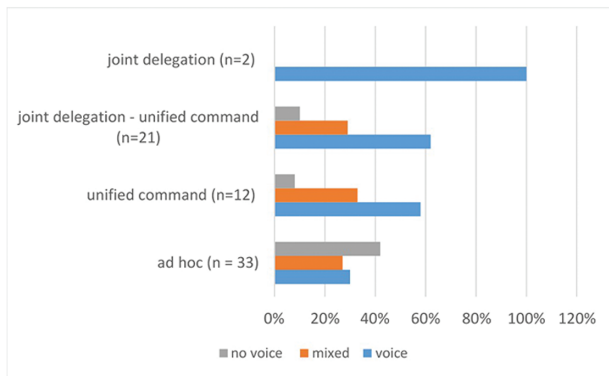**Figure 1.** Summit Fire Macro Governance Structure.

Figure 2. Perception of Voice by Principals under Different Network Structures.

joint delegation and unified command (*n* = 21) were perceived to have voice. In contrast, only 30% of the principals in an ad hoc arrangement (*n* = 33) perceived themselves to have voice. Among all of those who perceived to have no voice, 82% were under ad hoc arrangements, 12% were under a combination of joint delegation and unified command and 6% were under unified command. This pattern suggested core propositions that formal representation in the macro structure increased the likelihood of experiencing sentiments of having voice and that lack of formal representation increased the likelihood of experiencing sentiments of not having voice.

Results offer support for the proposition that formal systems of network governance via the tools of ICS add value in increasing voice among diverse jurisdictions and that those engaged in an incident via ad hoc arrangements are at greater risk for perceiving they have no voice on the incident.

> Proposition 1: Direct representation of principals in the formal network governance structure increases the perception of voice.

> Proposition 2: Lack of representation of principals in the formal network governance structure increases the risk for perceiving lack of voice during the incident.

Phase 3: Explaining the Counter-Factual Examples
In phase 2, we observed two general patterns suggesting direct representation in the formal network structure was generally more likely to be associated with the perception of voice and lack of representation in the formal network governance structure was a risk factor for principals who perceived lack of voice. However, there were instances in which principals did not perceive having voice in spite of being in the formal governance network, as well as examples of principals perceiving adequate voice despite having no formal representation in a network governance structure. These non-conforming instances offered opportunity to understand the mechanism by which participation in these macro structures influenced an agents' experience on the incident as well as the mechanism by which voice could be achieved, despite a lack of formal representation.

To understand these inconsistencies, we conducted a discrepancy analysis. Our aim was to understand and explain how those without representation gained voice and those with representation felt they lost it. The interviewers asked each informant directly about how they came to be involved in the incident, who they interacted with, how, when and where those interactions took place, and decisions they participated in.

Discrepancy analysis revealed 10 cases where principals were not formally represented in a network governance organization but still felt they had voice—we describe these as fully discrepant cases. There were an additional eight cases where perceptions of voice were mixed suggesting some sense of voice at some stage during this incident—we describe these as partially discrepant cases.

The Importance of Micro Structures of Network Governance: Voice Without Representation
In cases where those outside the formal organization still experienced voice, we noted compensatory patterns that essentially mimicked formal representation. All of these actions hinged on having pre-established relationships prior to the fire and/or leveraging micro structure communication and connection modalities during the incident. These included efforts to directly insert oneself into the formal organizational structure, leveraging pre-existing organizational relationships, and/or direct outreach by someone within the formal governance structure to the principal with an ad hoc arrangement. For instance, 13 participants leveraged existing relationships and previous experience to essentially create a quasi-formal representation, inserting themselves into the formal governance structure. In doing so, they mimicked the involvement of those formally represented, embedding themselves at the incident command post, attending daily briefings, connecting with the incident command and division supervisors, as well as obtaining phone numbers so they could contact key people within the formal structure as needed as issues arose.

Participants found different ways to insert themselves into the formal governance structure so their voice could be heard:

> …I would go to all the daily briefings every morning… And we'd be briefed on what the fire was doing and what the resources were. Who was

going to be assigned to what areas? And what the game plan was for the day… they would tell me what they were going to try to do. I would tell them what I would like to do. And in most cases, we would kind of meet in the middle there, you know?

Private jurisdiction

… Well I think they were very, very open to me being there, even though I wasn't …fire agency staff, like first, there were some people that thought it was a little odd that I would be engaged in these conversations with the incident command … that's not just a common situation. But I think the fact that they were willing to listen to our … Agency administrator, who wanted me there…You know, I think having those kind of agency sponsors was really important in giving me some credibility and respect from the team. And then I think once they heard what I could also offer in terms of knowledge of the places where they needed to get into but knew nothing about, it was beneficial on their side…

Local jurisdiction

… just being on the ground [at the incident command post]… was absolutely critical for communication [for me]. So, you know, the willingness of the team to welcome stakeholders in a role like mine that may not be a traditional role under incident management for fire response. It was very helpful.

Local jurisdiction

The findings from the discrepancy analysis led to the development of a third proposition:

Proposition 3: Micro structural communication modalities can mitigate structural risks for having no voice that are associated with lack for formal representation.

It is important to note that these same efforts by unrepresented actors were described as rebuked on other incidents. A variety of factors seemed to distinguish cases in which this type of quasi-representation was allowed, encouraged, or rebuked by the existing macro structure. These included the general disposition of the incident commander and other agents in terms of their openness to broader involvement in decision forums, the existence of pre-existing relationships among those not represented and those represented, and the justification for involvement as a quasi-representative. These challenges were illustrated by one federal representative who advocated fiercely to become involved and have his voice heard, as well as a local representative, who inserted himself on a different fire:

… you know, you try to give the team space, right, because I'm not a team member, and I get that. I am an agency representative, so I'm just saying, "Hey, you know, I -- hey, I've got interests here." And so typically when it's just a "hey, I have interests here, you're at the cooperator meeting. And that's like [electricity companies and transportation interests], and all that. But for me personally, it was like [our agency had] a lot more [at stake] …we have a lot more than just that. You know, so I think I need to be in the planning meeting. And so, I actually brought my laptop -- and was invited by [the incident commander] to sit in the Incident Commander's trailer so that I was in there so that I didn't miss any of that information. I could be a part of some of those conversations, conference calls, those types of things. But was only truly invited to one planning meeting. And I don't think it was malicious. … I think I became a pain in the [XXX], and I was really trying not to. But in the end, …I was here for my agency. They were there for their agency. And I kept saying the same thing where it was, "Look, I get it. You guys got a mission. My mission is different. So you support your mission, I support my mission because we're good soldiers for the agencies, but in reality, we need to come together on this. You need to see that I have value in my mission just like I see you have value in your mission.

Federal jurisdiction

…[for us]…we saw that the fire was potentially coming … across the county line. Our … fire agencies, fire chiefs, determined that we're going to insert ourselves by sending our incident management commanders over to [the neighboring county] to discuss with them the what ifs. And, what we were going to do if and when this fire came into our county. So, I think we kind of forced the issue. I don't know if we were invited, but we went that way anyway.

Local jurisdiction

A private landowner similarly observed how different incident commanders invited their involvement, thereby illustrating how different styles and approaches by incident commanders can impact principal involvement.

Well, for one thing, [IC#3] made himself more accessible to, at least, myself, and I think the

other entities. So, whereas, you know, I really didn't have access to [IC#2], right? You know, he was a very different person, and [IC#2] is one of those people that it's all very much "me, my. I do this. You know, I'm going to do this." Whereas, [IC#3], and I would also say [IC#1], it's much more of a "we" approach, which, well, from my perspective is much more effective [laughs], having a "we" approach if you're trying to be collaborative and use other peoples' knowledge in trying to deal with this incident.

Private jurisdiction

Breakdown in Formal Governance Structure and Expectations for Involvement: Perceived Lack of Voice Despite Representation

Among the three fully discrepant and 13 partially discrepant cases where participation in the macro structure failed to produce a sense of voice, the failure was described as having two roots. First, in some cases, failure was described as an organizational failure. For 10 of the participants, direction issued from the top of the chain of command failed to translate down through ranks to the tactical level, often unraveling along historical and institutionalized differences in tactics and strategy associated with different agencies. Different agencies have different cultures around how things should be done. Challenges occurred when operational folks executing the plan were interpreting direction through a different cultural lens. This left these individuals feeling that what had been agreed to was never executed on the ground and consequently their voice was not effectively translated into action.

> … I've known [the incident commander] for a long time. I've known a lot of his team members for a long time. I'm very proud of their team and what they do all over the United States. And, you know, so the fire, you know, makes a run. It does its thing, right. You've got, you know, operations folks on the ground that, you know, may have lost sight of what was discussed in the in-briefing….I think they kind of lost sight of what was being said in the in-brief, you know, and especially when it comes to tactics and to respect the needs of those private timber companies…. What I can't understand is with all the tactics that were discussed, some of that did not happen. It didn't happen on the ground. And, that stuff, you know, like I said before that I think that [the incident commander] was in lockstep with us. But, when your incident commander and your incident command post is 45 minutes to an hour away which is typical…. Your transference of your authority

to your people on the ground, you've empowered them to follow the orders that you've been given. And, I don't think that it happened…

Federal jurisdiction

Second, six additional participants, formally represented but who expressed lack of voice, described being unclear about their role and/or feeling that their counterparts discounted their input. In the case of the latter, a strong technocratic theme was present. For example, if the other members of the macro structure did not perceive the agent to have the experience to offer an informed and realistic opinion, they could be discounted, thus revealing a hierarchy among equals. In other cases, conflicting ideas about risk and prioritization failed to be negotiated and certain agents' interests were perceived to have been given priority. The chaos created during times of transitions appeared to be particularly susceptible to this type of dynamic.

For example, a local fire chief formally represented through unified command, described a transition to a new IMT and how that left him and his fire fighters left out of the operational space.

> I think we got, "The big boys are here now. You guys can just leave us alone."… they kind of brush us away.

When asked how the local fire chief would have liked to have been involved, he replied he would have preferred to have had their local skills and capacity respected sufficiently to provide local information:

> … [I wanted them consult with us about] what structures, what threats are in front of this fire…. [I have] map books of everything that's in front of this fire. Now I do understand that state and nationally, rural fire departments probably are not as proactive as mine. We have an outstanding mapping program. So and I understand that in a lot of rural areas they probably don't have this information. So when a team comes in, they're in the mindset of, "Okay, we've got to go do [reconnaissance]." But you've got to kind of you know, talk to the organizations where you're at and take them along with you…. [We made the offer to them and they said]…We'll let you know if we need anything.
> Local jurisdiction

These insights led to a final and fourth proposition. Micro structures can compensate when there is structural exclusion but are less effective when there is a breakdown in structural function.

Proposition 4: Micro structural communication modalities will be less effective in mitigating structural risks when the macro structure is compromised.

Discussion: Designing Network Governance for Conflicting Contingencies

Governance systems reconcile diverse interests to enable collective decision-making and action. As such, the question of representation in network governance is an important domain of consideration (Ansell and Gash 2007; Emerson et al. 2015; Saward 2005; Saz-Carranza and Ospina 2010; Saz-Carranza 2012; Sørensen 2002; Sørensen 2005; Sørensen and Torfing 2005a; Sørensen and Torfing 2005b). Representation is particularly pertinent to the context of complex disasters due to the tensions between democratic principles of representation and the need for timely, expert-informed response actions.

Our research revealed two kinds of representative structures of network governance that we classified as macro and micro structures. We saw great variation in how the three macro structures—ad hoc arrangements, unified command and delegations of authority—were combined. This purely structural analysis revealed four key findings. First, network governance on disasters, when formalized, can be fruitfully analyzed as a web of relatively complex principal-agent relationships in which questions of representation and delegation are critical. Second, incidents with a similar portfolio of affected jurisdictions differed from each other in who was represented formally in the fire organization and how. This suggests that while the ICS is a highly institutionalized model for network governance, its implementation varies significantly across incidents. There was particular variation in how local-level jurisdictions (i.e., county sheriff, county fire) were represented. In some cases, these local entities were formally included under unified command. In other cases, their inclusion was ad hoc. Third, while much of ICS is rooted in a logic of bureaucratic management, key principles of bureaucratic design become compromised in these network governance arrangements. Namely, agents in these networked organizations were structurally accountable to multiple principals both at the command (in the case of joint delegations) and operations level (in the case of unified command). Last, threatened and affected jurisdictions were actively engaged in the incident but sometimes not formally represented within the network governance organization. This leads to questions about mechanisms by which such actors gain voice and coordinate operations during the incident.

Design Insights into Governing Conflicting Contingencies in Complex Disasters

Task environments requiring immediate, decisive action are often recognized as best supported by hierarchy whereas collaborative decision-making requires more lateral, networked, organizational designs (Burns and Stalker 1961). In the lexicon of organizational theory,

dual needs for negotiating the needs of diverse interests and timely, coordinated action may create a task environment with competing contingencies (Gresov 1989). In this complex task environment, there may not be one ideal governance structure. The question then becomes, how can we think about the conflicting contingencies and governance structures that can mitigate the tensions inherent in the task environment. The task environment in which disaster networks perform suggests the need to look beyond existing modes of governance characterizations (e.g., Provan and Kenis 2008) to understand how network governance in these dynamic contexts can be understood. Our findings suggest insights for design principles in these complex contexts.

Formal Representation Matters

As our cases clearly illustrate, attempting to understand network governance of jurisdictionally complex disasters without attention to the macro structure of incident governance would be highly problematic. Further, ICS is not uniform in its implementation. In general, those formally represented in the response organization were more likely to perceive they had voice. In terms of macro structures, we saw variation in perceptions of voice. Consistent with the premise of competing contingencies (Gresov 1989), no one structural arrangement was universally associated with perceptions of voice or lack thereof. However, patterns of informant perceptions suggested that ad hoc arrangements held the greatest risk for marginalizing voice (Fig 1). This raises important questions related to representation in disaster networks. Representative democracy assumes that the "demos" is pre-existing and self-evident (Sørensen 2002; Warren 1992); however, disasters are dynamic and emergent and provide an uneasy fit with this assumption. While previous authors have called attention to the challenge of emergence on disasters (Drabek and McIntire 2002; Majchrzak, Jarvenpaa, and Hollingshead 2007), our findings provide a structural explanation for which actors are most likely to find representation challenging, as suggested in Propositions 1 and 2.

Formal Representation in Governance Is Not the Only Game Being Played

Classical organizational theory was predisposed to see macro structure as the crucial aspect of design (e.g., Burns and Stalker 1961). The prevailing assumption behind this is that if we get the macro structures of hierarchy or network right, then the rest of the mechanics of representation will fall into place. However, task environments with conflicting contingencies are theorized to create an exception to this premise (Gresov 1989).

Our data suggest an important and perhaps under-appreciated role for micro structures. Our discrepancy analysis revealed compensatory mechanisms in the complex interplay between macro and micro structures that provide voice in some situations where structural exclusion would be expected, as detailed in Proposition 3. Micro structures, including various communication mechanisms often exercised through pre-existing relationships were observed to create the mechanism for satisfactory representation of interests of those excluded from formal governance structures. In complex task environments where greater discretion by key personnel can help mitigate informational uncertainty (Gresov 1989), micro structures can facilitate representation and the efficient flow of information.

In dynamic disaster environments where formal network governance arrangements are often time-consuming bureaucratic exercises, this ability to represent the interests of concerned stakeholders outside of the formal structure is likely adaptive. At the same time, it is a design observed to carry greater risk for marginalization of interests because it is dependent on individual personalities allowing, encouraging or rebuking these efforts. This opens up new questions concerning the institutional and cultural forces that may reduce the risk associated with ad hoc arrangements during disasters. Current literature appears to be attentive to the macro structures within the network governance literature, but less aware of micro structures or their interplay with macro structures (e.g., Sørensen 2002; Sørensen 2005; Sørensen and Torfing 2005b). Our findings suggest the need to be attentive to the micro structures and their interplay with the macro structures.

Formal Structures Facilitate but Do Not Guarantee Representation

Our data suggested instances where the macro structure was formally inclusive of interests but dismissive of these representatives, per Proposition 4. Institutional and cultural forces can either mitigate or in this case exacerbate opportunities for inclusion or exclusion.

This finding speaks to the on-going scholarly debates about the appropriateness of ICS for complex disasters (for discussion, see Nowell and Steelman 2019; Streib and Waugh 1994). In particular, findings illuminated the mechanisms by which the network organization can fail to represent interests satisfactorily despite investments into formal arrangements prescribed through ICS. When authors address the limitations or advantages of ICS, they almost exclusively focus on the structural components (Auf der Heide 1989, 157; Bigley and Roberts 2001; Hunt, Smith, Hamerton et al. 2014; Jensen and Waugh 2014; Jensen 2016; Moynihan 2009). Our findings draw attention to the need to understand the dynamic interplay between the macro structural arrangements and the micro relational mechanisms, present, but often ignored, as part of ICS. As complexity increases, we are convinced that the micro elements of governance will overshadow macro structure in importance. Macro structures create a general framework of expectations for how actors will behave; however, as complexity increases, these expectations will need to adjust and adapt to changing situations. Without the appropriate micro structures in place to facilitate this adjustment, the network can fall into dysfunction.

Increasing Institutional Complexity in Formal Governance Will Hit a Point of Diminishing Returns

ICS is an efficient tool for integrating multiple interests under one command structure. But all tools have their limits. The prevailing assumption under ICS is that there is a super-ordinate authority who can exercise legal control over the entire incident (Nowell and Steelman 2019). However, this assumption is questionable for two reasons—changing environmental conditions and the legal limits of formal structural arrangements. First, complex disasters, like the 2020 1-million-acre August Complex wildfire in California, involved dozens of local, state, tribal, and federal government agencies, private interests and non-profit organizations. In short, the bureaucratic logic works in theory but will fail in practice because there are too many principals for a single agent to adequately represent.

Second, ceding authority to establish formal command can be a time-consuming process. Under quickly changing disaster scenarios, one can imagine situations where it will be difficult to get into unified command quickly enough to manage the disaster. These two factors together suggest the need for a design that embraces more dynamic, flexible micro structures that afford greater discretion to more participants, while creating workflow interdependence that is coordinated through a variety of vertical and horizontal communication modalities (Gresov 1989).

Disasters have some special characteristics that are noteworthy when considering expectations for representative governance. These include that they are emergent, involve scarce resources that require tradeoff in allocative decisions, evolve over time and possess governing structures that can take multiple forms. We have aimed to develop some original concepts—macro and micro structures— for understanding more precisely the mechanisms by which representation occurs and how it functions in disasters. Additionally, we have proposed some design elements, guided by empirically derived propositions, for understanding the

opportunities for, and limitations of, representation in networked governance arrangements.

In conclusion, we believe this research furthers our understanding about how representation occurs within disasters response networks on jurisdictionally complex disasters and perhaps provide a diagnostic model for understanding governance and representation in other networked settings. The four propositions we advance provide opportunities to investigate how these apply in other networked contexts, including disasters, to further advance the theory and practice of network governance. Different combinations of macro structures and micro structures can create representation that channels voice; there is no one model. There is no singular normative goal when we think about network governance and representation in disasters; rather there are contingencies that emerge out of complex contexts. Better understanding the role of representation and the relative strengths and weaknesses associated with the various contingencies identified here will help create more effective governance structures for better disaster response in the future.

Supplementary Material

Supplementary data is available at the *Journal of Public Administration Research and Theory* online.

Data Availability

The data underlying this article cannot be shared publicly due to confidentiality assurances as part of an approved IRB process (the Informed Consent is included in the Supplementary Appendix). Confidentiality was necessary given the litigious nature of this research context and associated risk to participants for sharing information about their jurisdiction's involvement with the incident. In light of this, informants are referenced only by role and fire names are replaced with pseudonyms. There are three groupings of data for this article: (1) Comparative case analysis of the 10 incidents, which are comprised from confidential interview data and ICS 209 reports (which would mean we need to reveal the specific incidents and thereby compromising confidentiality of individuals interviewed); (2) Transcript analysis from confidential interviews which allowed us to provide insight into the structure of representation and whether individuals perceived they have voice or no voice and then allowed us to code as to whether individuals had voice, no voice or were mixed; and (3) Discrepancy analysis which was from an in person case summary that would necessitate us violating the confidentiality of the interviews. The comparative case study analysis utilized a framework for collecting data and analyzing it. The worksheet for this comparative case study analysis ("Fire Complexity and Jurisdictional Analysis") is included in the Supplementary Appendix. ICS 209 reports can be accessed here: https://fam.nwcg.gov/fam-web/ under the SIT-209 drop down. We utilized reports from 2017, but cannot reveal the names of the fires in our analysis. The Interview Guide for the interviews conducted are included in the Supplementary Appendix. A methods brief is included in the Supplementary Appendix that details how the Voice, No Voice categorization took place for us to assess consistencies and discrepancies in our proposed propositions.

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