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Collaborations in Routine Emergency Management: Lessons from Sweden

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Abstract

Effective collaborations in emergency management is the Holy Grail for practitioners in Sweden and elsewhere. More than mere coordination, interorganizational collaboration is deemed by many as the most optimal arrangement to share resources and respond to emergencies more quickly and efficiently. It is also considered to be the source of a broadly and rather vaguely defined concept of greater good. Such collaborations tend to be uncritically accepted as innovative, especially in instances of large-scale disasters or planned events while routine emergency management arrangements tend to be under researched. This research is an in-depth case study of an interorganizational collaboration in the greater Stockholm region in Sweden concerning routine emergency management. The collaboration comprises the physical relocation of one operator each from seven organizations in the area and the establishment of the "Collaboration Cluster". Rather than attempt to define the concept of "greater good" we set out to evaluate the quality of collaboration from the perspective of each member organization. We build a multi-dimensional model to assess the expectations of each organization at the political, managerial, and operative level. What is more, we view the Collaboration Cluster as a network at the operative level and for this reason we employ formal Social Network Analysis (SNA) to tease out network variables that have an effect on the quality of collaboration.

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1. Introduction

The concept of networked governance in the sense that multiple actors share resources in order to formulate or implement policy, produce or deliver a public good is not new [1,2,3]. This has been a response to the fact that many contemporary social problems are "wicked" in the sense that they are difficult to define, they are multi-causal and without a clear solution but with the possibility of externalities, involving a multitude of actors [4]. As such, dealing with them requires increased levels of coordination, which according to Peters [4] is a fundamental policy problem in itself. When it comes to coordination, network arrangements are an advantage, but the challenge for the practitioners is to operate and cultivate the networked linkages without prioritizing them at the cost of their home organization [5].

Increasingly, informal interorganizational arrangements have been giving way to formalized networked structures tasked with producing a collaborative delivery of services. Despite the lack of consensus in the literature, collaboration indicates a more involved level of collective action than cooperation or coordination, and can be defined as

> a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is process involving shared norms and mutually beneficial interactions [6, p. 23].

In addition to the theoretical ambiguity posited by the multitude of definitions, as O'Leary and Blomgren Bingham [7] note, empirical research on collaborative public management has exploded over the past decade and the consensus among scholars is that there is a lot to be learnt. For example, Blomgren Bingham, O'Leary, and Carlson [8] posit that there is a need both for better conceptualizations of collaboration as well as for an understanding of antecedents, processes, and outcomes of collaborative practices. The authors also note the need for connections for practice as well as theoretical connections with other disciplines.

This study contributes to the body of knowledge on collaborative public management by studying the interrelations among the actors that comprise an interorganizational collaboration tasked to provide routine emergency management in Stockholm, Sweden. The study is innovative for two reasons: first, it envisions the collaboration as a network [9,10,11], which allows for the examination of the flow of information, trust, and personal connections through ties that bind the network members. Second, our empirical focus is on routine emergency management and specifically on the operative level of the collaboration, where no strategic decisions are being made. The main purpose of this paper is to understand how members of different organizations work together in order to better provide the public good of emergency management.

In the following section, we sketch the particulars of the collaboration cluster, whereas in the section after that we outline theoretical aspects of interorganizational collaborations especially as viewed from a network perspective. We continue by elaborating on method and data and conclude with some preliminary results.

1.1. The Collaboration Cluster

The co-location of emergency operators (the "Collaboration Cluster") is part of the larger project "Collaboration Stockholm Region", involving some 35 local, regional and national actors. The cluster forms the operative end of the larger project by operating on the field in routine emergency management, though with limited operating hours. The physical room (roughly 12m x 6 m) is located in the same underground premises in central Stockholm as is SOS Alarm inside a fire station. The organizations in the cluster are: The Police, SOS Alarm, the Swedish Transportation Administration (railways only), Traffic Stockholm (a sub-division of the Swedish Transportation Administration), the two regional fire and rescue services respectively (Södertörn and the Greater Stockholm), and the security center for the Stockholm public transportation. Each organization has a desk in the room equipped with their specific technical equipment, e.g. monitors, communication system, and incident reporting system. The tables are arranged in a circular manner leaving an open space in the middle. Additionally, and importantly for the information sharing, three large monitors on floor stands are used to show surveillance videos from roads and public spaces. (See Figure 1)

After three rounds of piloting, project managers decided to test this composition and arrangement throughout 2017. It is worth mentioning that the cluster is still run as a project funded annually by the Swedish Civil Contingencies Agency. As a consequence, the cluster staff are not authorized to make decisions in real emergencies; decisions as to what emergency vehicles go where are always made at each organization's home offices. The role of the cluster operators is rather one of information sharing and monitoring.

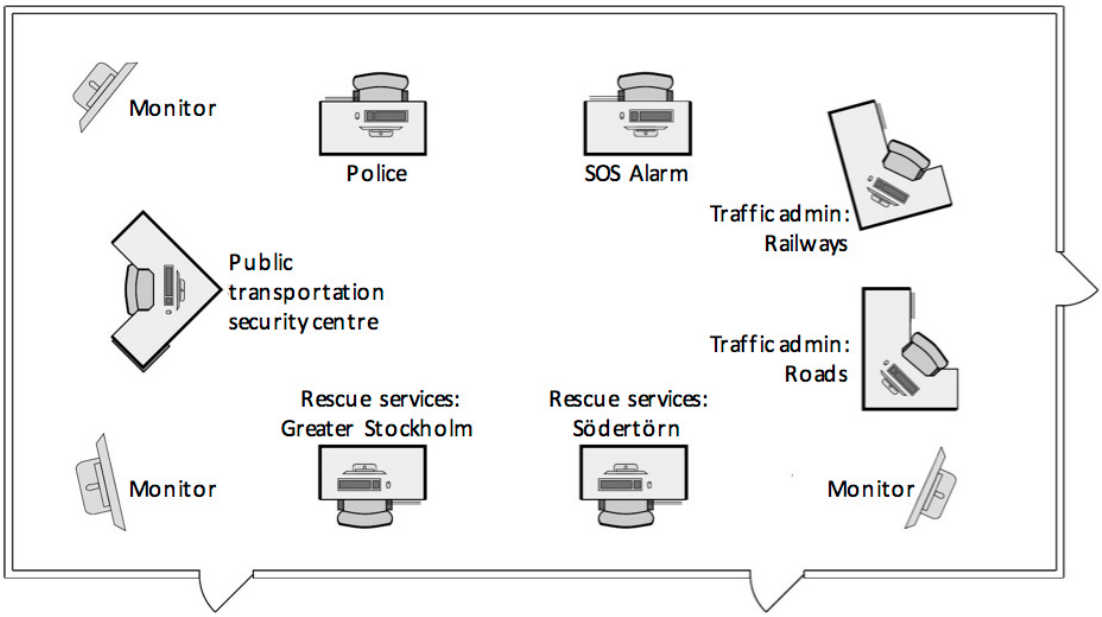

Figure 1 The physical layout of the collaboration cluster. (Courtesy of David Öjelid)

2. Interorganizational Collaborations and Social Network Analysis

The literature on interorganizational collaboration is extensive (see for example [12,13,14,15,16,17] whereas collaborative arrangements are often deemed a necessary condition for dealing with extreme events effectively [18]. Nohrsted [18] notes the gaps in the literature regarding collaborative arrangement in routine emergency management and goes a long way in filling those gaps with a study evaluating collaborative responses to extreme events at the management level. He proposes that further research study collaborative outcomes at different levels and types of events. What is more, Weinholt and Andersson Granberg [19] report that such collaborations have the potential to be cost-effective in a study of first response initiatives in the Swedish fire and rescue services but the study did not shed light into the 'black box' of collaboration.

The complexity of contemporary administrative challenges in general and emergency management in particular combined with scarce resources engender the need for interorganizational collaboration (for a Swedish case, see [20]). The scope and potential ripple effects in the context of routine emergency management contribute to the inability of each actor to achieve their goals individually and without access to the others' resources [21,22,23]. The prevailing view among researchers, practitioners, and policy makers is that service delivery through interorganizational networks reduces fragmentation and that greater coordination leads to effectiveness, which in turns leads to positive outcomes namely in this case better provision of emergency services [24].

Networks are analytical abstractions, heuristics, that allow researchers to shed light into the way actors (individual or organizations) are connected to each other and treat these connections as a dependent, independent or dependent variable [25,26]. As such, networks are not teleological arrangements in and of themselves. Rather, they

facilitate the examination of "patterns of connection and interaction between actors —either individuals or organizations— whose actions and intentions are facilitated or constrained by emergent patterns of connectivity" [26]. Typically, a considerable amount of time is spent on delimiting the boundaries of the network; however, in this case the network is a formalized interorganizational collaboration. We thus define our object of study as the network consisting of all the operators manning the cluster.

We adapt a number of facilitating and hindering factors influencing the effectiveness of interorganizational networks in disaster management from Kapucu and Demiroz [27], whose original model concerned network structures in disaster management. Meanwhile, the effectiveness of a network is defined as the "attainment of positive network-level outcomes that could not normally be achieved by individual organizational participants acting independently" [28] (cited in [27], p. 29). In practical terms for the collaboration cluster this means that the network provides better routine emergency management than each of the constituent organization would individually.

Facilitating factors

- Network density
- Network structure
- Trust between organizations
- Interoperable communication systems
- Pre-existing relationships

Hindering factors

- Power differentials between agencies and jurisdictions
- Mission and cultural conflicts
- Role ambiguity
- Lack of communications plans

The primary interest of this study rests with the formal interorganizational ties among the actors involved. However, given recent network research in disaster response, recovery, and mitigation [29] as well as the idea that effective collaboration builds on trust, which is furthered by iterative face-to-face communication [16], this study will focus on two units of analysis: the individual and the organization. Including individuals (that is, actors independent of their organizations) [29] will allow us to understand the informal ties present in the network. In practice, this means that the respondents of the survey will be asked to answer a number of questions from the perspective of them as individuals, as well as a number of questions from the perspective of the organization.

Research Questions

This study is guided by the following research questions:

Q1: Who seeks support during routine emergencies and who provides it?

Q2: How do personal and organizational relationships contribute to the effectiveness of the network, if at all?

Q3: How important is reciprocity in a collaboration network?

Q4: What is the potential influence on the network as key organizations leave?

3. Method and Data

The main rationale for choosing formal social network analysis (SNA) to assess the Collaboration Cluster at the operative level is the "generic hypothesis of network theory", which states that "an actor's position in a network determines in part the constraints and opportunities that he or she will encounter, and therefore identifying that position is important for predicting actor outcomes such as performance, behavior, or beliefs" [25, p. 1].

We view the network as an explanatory variable and are interested in the consequences of the observed network structure on the quality of collaboration as an end-result of the cluster (see [30] for a discussion on this). The data are collecting for this part of the study are relational in that they concern contacts, ties, connections and group attachments that relate one operator to another and are not reducible to just properties of each individual operator

[31]. Structural factors such as interconnectedness and cohesiveness among actors as well as degree of centrality have shown to positively contribute to a more effective network [32]. An actor with high degree centrality means that they are well connected and they have an advantageous position when it comes to things flowing in the network, such as information. Knowing this will enable us to ascertain, for example, which actors are vital to the continued operation of the cluster. Notably, regular communication and the information flowing through the ties that bind actors together facilitate stable relationships for the pursuit of mutual interests [31,33]. Ostrom [16] concurs and posits that regular, iterant face-to-face communication strengthens core relationships of trust, reputation and reciprocity, leading to higher levels of cooperation and thus higher net benefits—in other words better provision of emergency management.

To assess the structure of the network we collect relational data from the operators with questions including, but not limited to: which actors within the cluster they deem important; to which operator/organization they turn to for information most often; what kind of information is important to them; what professional expertise their organization has, and if they had previous collaboration with an organization now part of the cluster. Though the departure point for organizing the data gathered in this study are the factors outlined elsewhere in this paper, we have an inductive approach in this paper. More specifically, we adapt conceptual and empirical ways of thinking from networks in disaster management and policy networks to networks in emergency management in order to understand how the latter work.

In addition to the relational survey, we have conducted 15 in-depth interviews with managers at the member organizations. These interviews have been recorded and transcribed. What is more, we have observed the work flow in the cluster in several occasions. These instances provided the opportunity for informal discussion with the operators. Though these informal discussions were not recorded, copious notes were taken immediately each discussion and also during the observations. The relational survey has been piloted twice, but will not be administered until September, 2017. The preliminary results that follow are based on a first round of analysis of the interviews and the observations.

4. Preliminary Results

The iterant nature of working as operator in the collaboration cluster contributes to the smooth flow of operations when a call comes in. The operators work together often and the communication between them is tacit and almost imperceptible; they understand each other with the minimum amount of verbal interaction. This may result in faster response and resource optimization. What seems to flow during these interactions is information, and we expect the actor with the most information to be the most central, i.e. with the most power. One issue that was brought up by the interviewees was that if the collaboration cluster is not manned 100 per cent, then its operations fall apart. The police appears to be one of the most central actors based on their information resources.

At the same time, the operators of organizations that do not allow their operators to send out resources to an emergency become frustrated during a shift because being the conduit of information may be useful, but not being able to make decisions as to whether they can send out a car or a ladder incapacitates then as operators. Such is the case with the Greater Stockholm Fire Services.

Each organization has different routines for selecting operators to staff the collaboration cluster. Regardless, there seem to be operators that work there more-or-less on a regular basis. This, though facilitating the operations of the cluster, may create a distance between the operator in the cluster and their home organization.

More specifically, focus group meetings with operators revealed a set of highly interdependent factors that influence the everyday workflow of the cluster from an operative perspective. First, there seems to be an ambiguity concerning the role of each operator in the cluster vis-à-vis their home organization. The consensus among the operators was that the purpose of the cluster was to be an information sharing tool, but it is not clear what information is to be shared and how. Legislation regarding the protection of personal information prohibits a comprehensive integration of calls, especially those requiring ambulatory services. Additionally, the location of police cars is not visible to the operator directing ambulances or to the Rescue Services of Greater Stockholm and Södertörn neither are fire engines visible to operators not belonging to the rescue services.

This is part of the larger question of an interoperable communication system, or rather lack thereof. Each emergency organization has their own technical interface, which is the result of historical procurement procedures, organizational culture and legislation. All operators thought the cameras of the transportation services were invaluable, but generally any information sharing that occurs within the cluster takes place directly from operator to operator either orally or with body language.

What is more, the technical interface used at the cluster as a 'bridge' between the cluster operator and their home organization can sometimes create a distance between them. One operator from the fire services said that "you have to remember to press the button" when working at the home organization to allow the cluster operator to listen in to calls. He viewed this as an annoying additional step in his work duties. Most operators used skype to connect with their home organizations, which is not always reliable and sometimes they do not have sound, which makes it hard to get their colleagues attention. Broadly speaking, the communication of the cluster operator with their home organization is of varying technical quality, which compartmentalizes and silos the cluster.

The consequences due to the lack of standardization in the technical aspect of the cluster are compounded by a lack of a joint job description of the cluster operator. As mentioned earlier, the chief purpose of the cluster is information sharing. However, the nature of routine emergency management requires an active involvement in the course of an incoming emergency. Not all operators working at the cluster have the authority to make operative decisions, which tends to create collaboration gaps. Mostly, operative decisions (whether to send out cars or how many) are made in teams at each organization. For example, the single police officer staffing the cluster does not have the authority to make the decision to send (or for that matter not send) car(s) to an emergency call. The locus of decision is at the home organization, which often times means double work: for example, the cluster operator for the police has to pick up the phone and call to report an emergency requiring resources resulting at two or even three incident registrations.

In sum, preliminary results indicate that the Collaboration Cluster is a fruitful initiative that is viewed favorably by the relevant stakeholders. Having said this, there does not seem to be an integrated way of working in the cluster; the latter consists of organizations attempting to collaborate in routine emergency management, but they do this without a joint protocols and operating procedures. They are a number of operators working in the same room, collaborating *despite* the home organizations and not *because of* them.

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