To the Edge and Beyond: Adaptive Coordination during Police Pursuits

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EGOS 2017, subtheme 53: Resilient Organizing:
Managing in Extreme Context and Situations of Crisis

Abstract
Fast-response organizations excel in mounting swift and coordinated responses to unexpected events. They have developed standard responses to minimize sensemaking needs during such events. Even then occasionally events occur that are developing so fast that they outpace the time needed to collectively make sense. Our inductive study focuses on such situations during high-speed police pursuits. Our analysis suggests that police teams move between three different social-cognitive zones, their comfort zone, potentiality zone, and danger zone. Each zone differs in the way coordination is being achieved. The paper offers a theoretical framework toward a greater understanding of how coordination unfolds when the fast-response organization is pushed to its limits and beyond.

Keywords: *fast-response organizing, coordination, distributed sensemaking, potentiality zone*

Introduction

Fast-response organizations excel in mounting swift and coordinated responses to unexpected events by developing standardized responses to many different kinds of events to minimize sensemaking needs (Bigley and Roberts 2001, Lechner and Kreutzer 2010). Even then, however, occasionally events occur that are developing so problematically that standard procedures no longer suffice (Faraj and Xiao 2006; Schakel et al 2016). In such situations fast-response organizations are drawn outside their routines and standardized operating procedures. Bigley and Roberts (2001), for example, studied how the fire department routinely coordinate their operations by relying on scalable Incident Command Systems. When the situation evolves in such a way that standard procedures are no longer sufficient, actors engage in bricolage, role-based switching, and dialogic practices (Bechky and

Okhuysen 2010, Bouty et al. 2012, Faraj and Xiao 2006). Other studies indicate that in exceptional settings, e.g. during catastrophic disasters, formal structures become fully compromised and actors need to fall back on principles of self-organizing (Beck & Plowman 2014; Majchrzak et al. 2007).

While many studies focus on how actors coordinate within either routine, exceptional, or chaotic situations, we study how actors in fast-response organizations adapt their ways of coordinating when confronted with losing or regaining control. We regard this as a gradual process in which coordination modes become ineffective and the organization is forced to adopt a more suitable mode of coordination to avoid spinning out of control, or to fall back on more routine ways of coordinating as soon as this is possible.

To gain a better understanding of how actors coordinate concerted responses when being pushed to their limits, we study the coordination practices of officers during police pursuits. Such setting is ideal for studying our subject as pursuits are inherently fast-paced, unpredictable, involve multiple types of officers, often crossing multiple administrative boundaries. During pursuits opportunities for shared sensemaking are scarce, while coordinated action is directly needed and often but not always achieved. The research question we are interested in is: *how does coordination unfolds when a fast-response organization is pushed to its limits and beyond?*

Fast-response coordination: from routine to exceptional settings

Fast-response organizations develop structures, protocols and standardized ways of working to coordinate activities within their regular operations (Faraj & Xiao 2006). How challenging their work may be, the routine of fast-response organizations is to draw on these structures in combination with a large reservoir of shared experiences (Bigley & Roberts 2001). The

regular task of crisis response services is to mount a fast response to any type of crisis at any scale. To this end, emergency services have developed the Incident Command System (Comfort et al. 2001; Moynihan 2009). Actors operating within the ICS framework deploy structuring mechanisms and cognitive management methods to rapidly scale the response to an evolving crisis and adapt the structures in action by migrating authority and elaborating the structure towards specific roles that are required given the type of crisis (Bigley & Roberts 2001). In such settings role-based coordination allows temporary collaborating teams to swiftly start and work efficiently within a recognizable structure, without necessarily knowing their colleagues intimately (Bechky & Okhuysen 2011; Schakel et al. 2016).

When confronted with unknown or threatening situations, inevitable tension builds up between routine coordination practices and the increasing need to communicate (Quarantelli 2007). At a given moment teams will have to break protocol and engage in dialogic practices to handle the situation (Faraj & Xiao 2006). Organizations operating in dynamic environments are regularly more dependent on adaptation rather than on specialized routines that normally guide bureaucratic organizations (Okhuysen & Bechky 2009). Although known routines are insufficient to deal with the situation, previous experiences allow actors to devise new combinations of existing social-cognitive resources to construct a suitable response. In the coordination literature, this process is described as bricolage (Baker & Nelson 2005). Okhuysen and Bechky (2011), for example, use it to describe how SWAT teams and film crews are able to reorder existing workflows after a major disturbance.

In exceptional fast-response settings, actors try to make sense of the situation through equivocality reduction, which can be challenging, especially when time to make sense is limited (Brown et al. 2015, Colville et al. 2013). In these situations we often see that formal structures fall short or fall apart, forcing actors to abandon their known structures and to

construct new ones in action. Weick's (1993) famous analysis of the Mann Gulch disaster is exemplary of this situation. When a team of 'smokejumpers' was caught by surprise when a forest fire suddenly raged uphill, they dropped their tools and abandoned their team structure, leaving them no option than to save themselves (Weick 1996).

We have seen teams challenged by similar pressures during hurricane Katrina when single responders required to act against the chain of command by 'just making do', while securing busses for evacuation, or finding ambulances for transport (Kroll-Smith et al. 2007). As emergency responders looked for alternatives to help stranded citizens, they also spontaneously formed emergent groups to provide disaster relief, consisting of members of emergency services, private organizations, and private citizens (Majchrzak et al. 2007). As there were no plans or previous experiences to fall back upon, the actors relied on swift trust and developed emergent mechanisms, such as a shared narrative, meetups, or a website, to coordinate their actions.

Overall, studies of fast-response coordination have taught us that different settings may require different modes of coordination. While the literature includes rich explanations of dynamics within each setting, we also witness that actors are forced towards the edge of their abilities while trying to maintain or regain control. Coordination in such dynamic situations tends to become problematic (Quarantelli 2007; Schakel et al 2016).

Fast-response organizations employ different strategies to avoid spinning out of control, such as flattening the hierarchy and rely on the self-organizing strength of the first responders (Weick & Sutcliffe 2011). To regain control after a major disaster, emergent structures may also be formalised over time. Beck and Plowman (2014), for example, show how a large-scale collaboration emerged in the aftermath of the Columbia shuttle crash in 2003. During the cleanup of shuttle fragments that had fallen down across a vast area in

Texas and Louisiana, the collaboration grew to circa 130 response organizations, ranging from NASA to the Forest Service. Initially these organizations deployed portions of portable incident command structures, which in the following months gradually clustered into permanent ones.

Where these studies focus on particular modes of coordination or processes that stretch longer periods of time, our interest is sparked by the question how coordination is being adapted *on the fly* to edge away the moment of losing grip or regain control as soon as opportunities hereto are present.

Methods

Description of research context

One of the classic fast-response organizations is the police. In the aftermath of accidents it is their task to ensure that other emergency services can work safely. During incidents with malicious intent, such as robberies, they have to ensure that the persistent threatening situation is ended and that the suspect is brought to justice. One effective way to do so, is by apprehending the suspect, which is a combination of searching, following, pursuing, intervening, and arresting.

Apprehending a suspect, especially the case of vehicle pursuits, offers a dynamic organizational task regarding coordination among police units that become involved 'on-the-fly'. It is a situation in which every police officer may find himself one day, demanding continuous risk assessment and collaborative decision-making under high time-pressure. These characteristics make vehicle pursuits an interesting research setting to study how a fast-response is mounted, and how the various actors are losing and trying to regain control over the situation.

Data collection

For our data collection we adopted an inductive approach (see table 1). As observers we were able to study the roles, tasks, and actions of each of the different actors that may become involved in a vehicle pursuit. Interviews and review of documentation such as formal protocols and guidelines were used to better understand how pursuits are being coordinated. The data collection was complemented with video-footage taken from the police helicopter, radio communication transcripts, press articles, and a television documentary covering police pursuits. To conclude, we organized a number of feedback sessions based on our analysis, providing the practitioners the opportunity to complement or adjust our findings, thus providing us with additional data and insights.

Data source	**Quantity**
Observations at Operations Center	20 hours
Observations in Police car	32 hours
Interviews	17 interviews
Internal documentation (protocols, reports, transcripts)	8 pieces
Helicopter video tapes	2 pieces
Pursuit-related radio communication tapes / transcripts	2 hour, 18 min
Press articles	44 pieces
TV documentary 'de Meldkamer'	9 episodes
Feedback sessions	3 sessions

Table 1: data sources

Data analysis

To combine and synchronize the insights from a wide range of materials we conducted three iterative rounds of analysis, gradually deepening and interconnecting the insights we were

developing. We used the analysis tool MaxQDA to assign codes to what we considered to be important events, aspects, and interactions during the pursuits (Corbin & Strauss 2008). We broke down the data through open coding to understand different aspects of coordinating a pursuit (Corbin & Strauss 2008). Themes and quotes were identified that seemed to be important to mount a fast-response operation, such as positioning units, aborting the pursuit, spontaneous involvement of units, boxing, and calling out the position of the suspect.

We continued with axial coding to reveal the thematic relationships and contrast between the codes. In our discussions we uncovered different phases that characterized the modus operandi during the pursuits, which led us to formulate three gradual zones, i.e. comfort zone, potentiality zone, and danger zone. After identifying the different zones, we systematically analysed the differences between them and developed a corresponding data structure (see table 2) (Gioia et al. 2012). As a last step, we constructed a process model, explaining why and how teams may shift from one zone into another. We validated our process model by studying materials of other pursuits, such as police reports, footage taken by the police helicopter, and a tv documentary. In addition, we solicited feedback from police officers working at the national operational center to check and fine-tune our findings.

Findings

We found that police teams during pursuits may gradually shift between different social cognitive zones: the comfort, potentiality and danger zone, and that they adjust their mode of coordination accordingly. These zones are archetypical: the more characteristics apply, the more likely it is that the team adapts it mode of coordination to fit the dynamics of that particular zone (see Table 2). In the full paper we will detail the empirical concepts in this table based on a qualitative analysis of coordination dynamics during different pursuits.

Characteristic	Comfort zone	Potentiality zone	Danger zone
Time for collective sensemaking and planning	Sufficient	Limited	No time
Problem situation	Ample understanding of problem situation	Problem situation understood, but fastly evolving	Status of problem situation not well known
Leadership	Hierarchical	Delegated to best informed	Unclear who is leading
Collabora-tion	Routinized collaborations	Infrequent to rare collaborations	Collaborations fall apart
Resource allocation	Planned	Ad-hoc allocation	Spontaneous involvement
Operational understanding	Ample understanding of who is where and doing what	Short facts about evolving incident, including facts about key players locations, speed, and engaged practice	Confusion among collaborating teams and team members about who is involved, who is doing what and where

Table 2. Indicative characteristics per zone

Our analysis of coordination dynamics between police units involved in pursuits indicated that shifting between the zones is predominantly caused by changes in the speed of developments and the number of actors involved in the response (see Fig. 1).

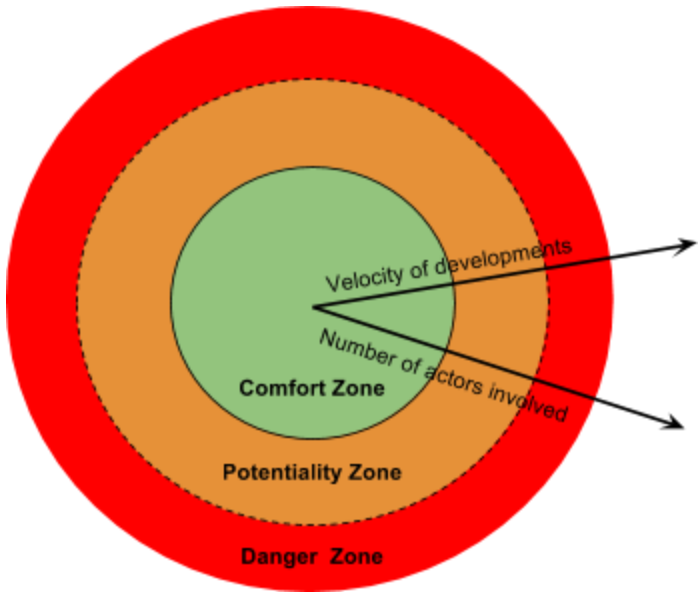

Figure 1. Predominant factors affecting social-cognitive zones

While increasing speed of developments and number of actors may add to an escalating situation, it is not always something that can be controlled. Thus, while commanders try to reduce the speed and number of actors, they also have to act given the dynamics of that moment (see Fig. 2). For instance, leadership is regularly delegated to 'the best informed officer' when time for consultation is lacking.

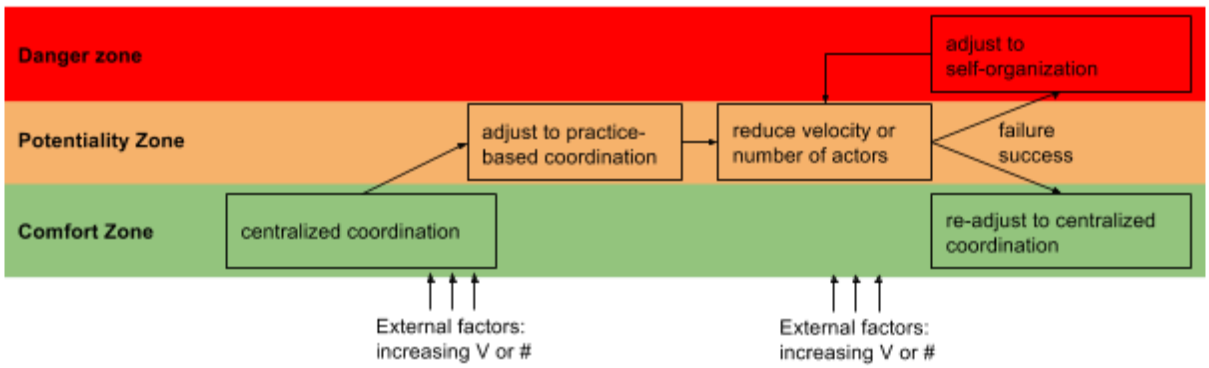

Figure 2. Process model: adaptive coordination under increasing pressure

Discussion

Our analysis suggests that fast-response organizations operate in three different social cognitive zones: their comfort, potentiality, and danger zone. We found that each zone is characterized by a different mode of coordination. When the situation has spilled out of control, actors are often able to recompose themselves by reducing the speed and the number of actors involved in the operation.

As operating in one of the three zones is neither good nor bad, but appropriate for the situation at hand, operating in the various zones has to be re-valuated. When pushed outside its comfort zone the organization has to go with the flow (rather than freezing, fleeing or

fighting it) and adopt the appropriate coordination mode. In the meantime efforts may be undertaken to reduce complexity and thus prepare the path for gaining more control.

Our analysis offers new insights into how a fast-response organization is able to adapt on-the-fly in order to deal with unpredictable and fast-evolving situations. Where others have studied modes of coordination within one of the social cognitive zones (e.g. Bigley & Roberts 2001; Comfort 2007; Okhuysen & Bechky 2009), we have shown how organizations may be drawn outside their comfort zone and are being forced to adapt their mode of coordination accordingly. Rather than the often suggested dichotomy between centralised command & control versus decentralised self-organizing (e.g. Comfort et al. 2001), we found that both archetypical ends seldom apply. Instead, the organization adapts its way of working to the situation at hand.

Conclusion

When operating in fast-paced and escalating environments, police organizations adapt their mode of coordinating on-the-fly to match the pace of development and the opportunities to coordinate the actions of both directed and spontaneously enrolled participants. They are able to operate way beyond their comfort zone and are able to recompose by reducing the speed of developments and the number of actors involved.

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