On Missed Beginnings

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> You miss the beginnings ...
> Christian Heath (ca 2004)

Introduction

Using a video camera as part of ethnographic workplace studies does not make it possible to 'capture' the social organisation of work in a particular setting. Although the camera can record activities in the workplace, it only records images. Moreover, however strategically placed, its frame of view will exclude the past, the what happened before it was turned on, things outside its frame, words spoken at the other end of a telephone, things seen on a screen, or hidden behind someone's head or hand. To borrow a term from emergency response, situation awareness of situated action is hard to achieve. This lack of video - if we want to call it that - is exacerbated when we're not engaged in work*place* studies, but studies of work, and especially when that work is mobile. In this paper we explore some affordances of video for ethnographic studies of work through a preliminary analysis of a 15 minute sequence from a 2012 emergency response exercise in the UK, aiming to train responders' understanding and use of command structures during a major incident.

We will describe some aspects of the work of exercising command structures, and, through this, explore affordances of video, with a particular focus on 'beginnings' and 'missing beginnings'. This focus is inspired by discussions with Christian Heath, Paul Luff, Jon Hindmarsh, Dirk vom Lehn, Lorenza Mondada, Alexandra Weilenmann and others during data sessions at King's College. Mobile ethnography and 'roving' cameras – methods we use to study mobile work and the work of mobilizing information, resources and people – frequently miss beginnings, such as the claiming of a turn in interaction. This makes some forms of analysis difficult, but, we argue, also opens up opportunities for other forms of analysis and design. Moreover, missed beginnings are a common occurrence for emergency responders, creating common ground for collaboration.

Missed beginnings in emergency response and training

For emergency responders missed beginnings are routine. Their work starts with calls by members of the public to emergency help lines. Things have already happened. Things that require causes, effects and potential further consequences to be understood quickly to mobilize a response. Repeat calls and calls that describe complex or large scale events are indicators of 'major incidents', that is, incidents that require collaboration between the different statutory emergency agencies (police, fire, medical) and potentially other actors. This is the starting point for our sequence, taken from the second day of a two-day emergency response exercise organised by the Allshire Local Resilience Forum (LRF)[1] in collaboration with partners from key statutory agencies in the area. Lisa Wood was involved as a participant observer, and with Monika Büscher she is a domain analyst in a European research project concerned with the design of computer technologies and architectures for large scale emergency response (http://www.bridgeproject.eu).

Around thirty people are gathered in a large room for the exercise, including high ranking police officers, special firearms officers, fire service chiefs and firefighters, paramedics, Health Authority officials and trained 'loggists' (with varying backgrounds), National Incident Liaison Officers (NILO), media liaison staff and local government resilience officers as well as exercise organisers and observers. The exercise scenarios develop around a threat of attacks in relation to a large entertainment event taking place in a major city (UKCity)[2]. During the first day, the exercise simulates the start of the event. Things are calm. However, towards the end of the day, the MI5 Joint Terrorism Analysis Centre raises the UK threat level to 'severe', suggesting that 'an attack is highly likely and might occur without further warning'. The emergency responders are told of intelligence that suggests attacks directed at crowded places.

The second day then begins with reports of an attack on a nearby airport, triggering frenzied activity. Police officers, fire trucks and ambulances are despatched. Within the exercise room, the organisation of a command structure is enacted with a certain degree of 'artistic license'. For example, all agencies are gathered together in one large room, when in reality they would be located in separate stations and hospitals across the region. Here, each agency has been provided with a table designated (by a laminated sign placed in the centre) as their work space for the exercise. As reports from first responders on site come in, a table in the centre of the room is cleared for a 'Gold command' team to gather (Figure 1). The central table is chosen because it allows most participants to see and overhear the work done here, which is further supported through the use of a microphone and speakers. This actually eradicates some of the difficulties that often arise under real world conditions where actors would be highly distributed, communication only possible through the use of technologies, and communication networks very likely to be at least partially destroyed or otherwise inoperable. However, other aspects of establishing command and control structures can be practiced. The Gold Command team is part of a standard hierarchical

[1] People's names, place names and other details have been changed.

[2] Even though severe weather events and accidents are more likely causes of major incidents, training often focuses on (terrorist) attacks. The potential severity of effects and an assumed 'translateability' of skills to more normal accidents and emergencies are reasons. As citizens, sociologists and designers we are critical of this.

'gold, silver, bronze' command structure, and led by the police. It is supposed to be composed of leaders from the fireservice, emergency medical organizations, and in this case also includes a senior firearms police officer and a military advisor. The Gold Command is meant to assume overall 'strategic' responsibility for the response effort, provide logistical support, set up help lines, missing person or casualty lists, and brief the media. In collaboration with Gold, 'Silver Commanders formulate the tactical plan for their service, in order to achieve the strategic priorities determined by Gold Command. They coordinate actions at the bronze level and manage resources across incident sites. Bronze Commanders are despatched to the scene and oversee the response at the operational level.' (McMaster, Baber, & Houghton, 2007).

We join the Gold Command table as things at the airport appear to be coming under control. Darren, Gold Commander for UKCity East Fire and Rescue Service, can be heard off screen: 'Alan? (.) can I just butt in?'. Alan is a senior police officer, leading the Gold Command. He has just been handed an 'inject', that is, a sheet of paper with a situation report from the exercise organisers. The camera zooms in on the sheet, moving with Alan's eyes, which turn from a colleague he is listening to on his right to the sheet, just as Darren calls him. The camera then moves to capture Darren speaking (Figure 1:1).

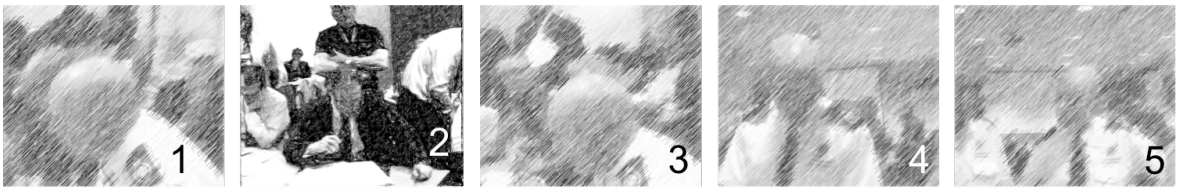

Figure 1 Training practices of command and control during a staged major incident.

Darren: Alan? (.) can I just butt in? We've, we've just been notified of a shooting incident going on at the Dovedale Shopping centre in UKCity East with 20plus shooters. (.)
Alan: Ok
Darren: [live ((camera moves back to Alan, Figure 1:2)]
Alan: [right] ((Alan is looking at the document and around the table))
Darren: at the moment
Alan: (0.3) ((continues to look at the document and around the table)) OK, IS EVERYBODY LISTENING PLEASE, the information, erm before we finish this meeting for this particular e-e- event, we might as well take this information live now, er (.) It is at the- ((reads from inject)) Dovedale shopping centre is hosting an entertainment themed event offering free children's entertainment, free food and discount in most shops. This has been widely advertised, and is already well attended due to the imminent arrival of various TV celebrities. UKCity East control room have taken a large number of calls of a firearms incident at the Dovedale shopping centre. From the informant, an off duty police officer, there are 4 males, all armed with automatic weapons, have opened fire. Estimated 20 plus persons hit and down, some not moving. Everyone else is in panic and running for the exits. Offenders are going into the shops and shooting people at random. Grenades are being thrown. There are some questions for the police in terms of firearms resources (0.3) which we will go away and deal with er- separately. Er (0.7) right. There's a question 'Are the fire officers …'

Darren has received the news about the second attack from colleagues in his UKCity East

fire station, who are the only real workplace participating in the exercise. This prompts him to interrupt Alan at just the moment when he receives the same news on an inject.

This minute-long sequence constitutes the beginning of a new phase in the response effort and its command and control structure. It is escalated to a 'Plato' operation, that is, a response to 'indiscriminate shooting by terrorists for a period of time within a public arena causing mass casualities' (Sims, 2012) and a governmental 'Platinum Command' and Cabinet Office Briefing Room may have to be established. The short sequence also constitutes a series of missed beginnings for the emergency responders – offenders seen and shots heard at the shopping centre, multiple calls to the emergency call centre, the call that informed Darren. The activities of multi-agency emergency response and the social organization of its command structures are multi-sited practical achievements that require the mobilization of information, as well as people and resources, and require people to 'run' with the information they have.

The ethnographers' missed beginnings

Many of these activities, even though they are here gathered together within one crowded room, are missed by the lone ethnographer and her roving camera. Beginnings are particularly hard to catch. For example, we do not know who hands Alan the inject, and do not see how Darren is informed, or how he initiates his interjection. Some beginnings are, however, captured. Thus, while the camera misses the receipt of the inject, the ethnographer anticipates the reading out of the document. She moves the camera from Darren to Alan on Alan's 'OK' and continues to record from this perspective even though Darren elaborates his news (Figure 1:2). Another 'order' of ethnographically missing beginnings and some implications for the ability to analyse the social organization of emergency response work becomes visible here.

Analysts, including ourselves, are often drawn to 'find the action' in a way that provides an overview of all relevant elements as far as this is possible (Heath, Hindmarsh, & Luff, 2010). From this view, even though our camera captures the beginnings of the reading of the document, the fact that it only captures Alan is problematic. To understand the interactional organization of the reading, a wider frame seems necessary. However, we find the desire for complete(?) overview implied by this troublesome. Even the best possible bird's-eye view or multiple cameras can not 'provide' 'situation awareness' to the ethnographer. Definitions of this term in emergency management resonate strangely with some common motivations for video analysis to 'capture' the action, with Endsley defining situation awareness as '… the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future.' (Endsley, 1995:36). Within the field of emergency management, the concept – originally from military practice and increasingly used in emergency response, is criticised by Harrald and Jefferson, who argue that a 'common operational picture' does not lead to 'situation awareness'. The assumption 'that data is the only barrier to appropriate [understanding and] action' is deeply flawed (Harrald & Jefferson, 2007).

In contrast, in our video, the discovery of the social order of the Gold Command in-the-making is 'from within' (Macbeth, 1999), and affords analytical insight at several levels. For example, Lisa's intuition that Alan will be the next active speaker is based on her

reading of the situated adaptation of the 'news delivery system' as it applies to 'bad news' (Maynard, 1997). Normally, a recipient of bad news (here Alan), would provide a 'news receipt' response and then be open to listen to the original speaker's 'elaboration turns'. Here, Alan's tone of voice, timing and embodied conduct mark his response 'OK right' not as a news receipt but as a claim to speak. This is captured not only in the audio-visual record, but also in the embodied *in situ* analysis by the ethnographer. Her video also creates further opportunities for analysis, as further beginnings are 'caught', such as the pauses that occur when Alan moves from reading the factual parts of the inject to prompts for things the emergency responders should consider, such as questions about firearms resources and deployment of fire officers. His hesitation opens a new phase in the meeting.

Because the mobilities and multi-sited-ness of collaboration matter for an understanding of multiagency emergency response, we will now provide a short summary of how activities unfold further, constructed from video records, the ethnographer's observations and her conversations with participants. We will then conclude with a consideration of common ground.

Alan suggests that all individual Gold commanders now 'return to our individual agencies to establish how we're dealing with these [events]' and reconvene later. When Darren goes to his fire station's table, to simulate what would normally be mediated communications between him (stationed in the Gold Command location) and his UKCity East Station and on-scene colleagues, he tells them that the other agencies need to have access to their control room and logs (Figure 1:4&5). Simultaneously, a bustle of informings ensues between operational and tactical personnel. As Lisa attempts to follow the flow of information ethnographically, she discovers many potential routes:

- *Physical movement of 'informers'*. During exercises, physical meetings often simulate mediated communication and assume good networks. However, in real situations human 'runners' may be required to relay information, for example between the London 7/7 incident sites and the tops of underground tunnels, due to the inoperability of radios underground (Barnes, 2006).
- *Co-presence* of bronze police and fire officers on site was simulated in a room down the corridor.
- *TETRA Radios*, which are interoperable between all first responder agencies.
- *Radios* After having been briefed by Darren, a fire-service officer instructs on scene commanders via the fire-service's dedicated radio (Figure 2:6, also 9&10).
- *Mobile phones*. Darren calls and receives calls from colleagues, which Lisa initially does not record because she assumes them to be personal. There are also some multi-party telephone conferences.
- *The UKCity East station*, where some operations are being simulated and information is shared via radio, computer logs and mobile phones.
- Multiple *Logs* – Each agency is instructed to log key 'events', 'decisions' and 'rationales'. Some choose to produce multiples: handwritten notes, a form (which never seems to get filled in), a computer based log (Figure 2:7,8,10,12).
- *Maps* – laminated maps are annotated and circulated. For example, a police firearms officer shows a map with the 'hot' (dangerous) zone and the 'rendevous point' (for on site bronze commanders) to the UKCity East fire-service loggist, 'just so you're aware of that' (Figure 2:11), and it is discussed again when he calls the silver leader from 'Ambo' [Ambulance] and the fireservice to sit with

him to simulate a three-way telephone conference (Figure 2:18-20)

- *Multiple Injects*. Each agency receives 'injects' specifically relevant to them, simulating reports from on scene personnel.

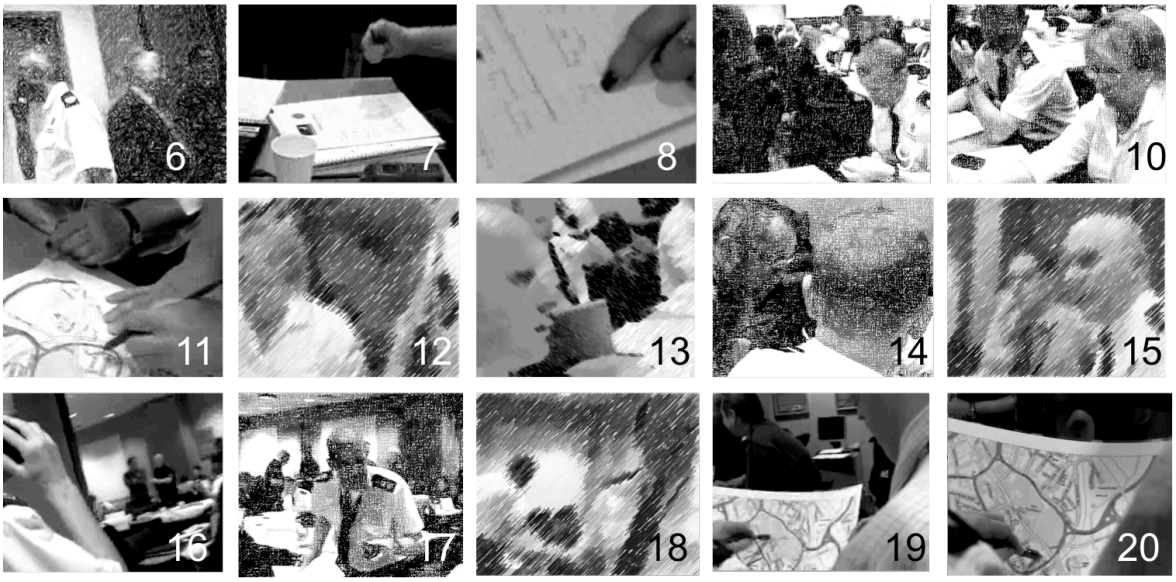

Figure 2 Following information flows.

In a real emergency response situation, these information flows would multiply, creating demands on video analysis that cannot be met by an approach that seeks comprehensive capture of interactions. While studies of 'centres of coordination provide a perspicuous setting for studies that can answer many questions (Goodwin & Goodwin, 1996; Christian Heath & Luff, 1992; Suchman, 1997; Whalen, 1995), we find that mobile video ethnographic methods and an acceptance of partial perspectives are also necessary. If these are discovering and documenting social orderings 'from within', they can be powerful analytical tools.

Conclusion

For the emergency responders, there are many known and unknown 'missed beginnings' in the communications we describe above. On site bronze staff, for example, do not witness the production of a strategy that broadly informs instructions given to them, while the Gold commanders do not know how logged events started or unfolded, or how critical events may be developing moment-by-moment.

A worst case example of an unknown beginning might be the Fukushima Daichi nuclear disaster, where plant operators 'lacked sufficient understanding about the functioning of the IC [isolation condensers]' (Hatamura, 2011). The scale of destruction, subsequent transport, energy and communications outages, as well as differences in national, organisational and professional cultures and languages make it unsurprising that communication between emergency responders and other parties (e.g. Tepco) was difficult in this case. But professionals' own evaluations of their response efforts frequently highlight coordination, information, and collaboration as in dire need of improvement (see e.g. Shaw, 2011; Tierney & Goltz, 1997). They call for 'domain analysis', technologies

and best practice innovations that can 'provide' a 'common operational picture' and better 'situation awareness'. But, not unlike video analysts, emergency responders can be drawn into a preoccupation with 'overview'. However, a more agile combination of partial perspectives produced on the move and from within may provide a more promising avenue for innovation in both fields.

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