UNIVERSITY OF CALIFORNIA,
IRVINE

Crime, Emergency, Discourse, and Technology: The War on Crime and the 9-1-1 Emergency Response System

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Social Ecology

by

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2014

DEDICATION

To

my family and friends,
Astrid and Atlas,
Bart and Machi,
And Happy Cloud

La fede unqua non debbe esser corrotta,
o data a un solo, o data insieme a mille;
e così in una selva, in una grotta,
lontan da le cittadi e da le ville,
come dinanzi a tribunali, in frotta
di testimon, di scritti e di postille,
senza giurare o segno altro più espresso,
basti una volta che s'abbia promesso.

~

No faith, once pledged, should ever be betrayed,
Whether to one, or many, it is sworn,
Whether in wood or cave the words are said,
Far from the homes of men, in haunts forlorn,
Or in the courts where solemn pacts are made,
Witnessed, on parchment, which fair seals adorn.
There is no need for outward sign or token:
Suffice it that a promise has been spoken.

Ludovico Ariosto
“Orlando Furioso”
Canto XXI, Stanza II

TABLE OF CONTENTS

ACKNOWLEDGMENTS

Thank you to Dr. Justin Richland and Dr. Elliott Currie, for being my dissertation chairs. Their insights and conversations were the fire that forged this project.

Thank you to committee member and staunch social theorist Susan Bibler Coutin for suffering through many classes of my pragmatic and phenomenological writing and then choosing to inflict this project upon herself. She bears it with grace.

Thank you to the dispatchers and dispatch supervisors who welcomed me into their workplace and shared so many colorful stories.

Finally, thank you to my family. For your support and for not always asking me how it was going and when I would be done.

CURRICULUM VITAE

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FIELD OF STUDY

Human Decision-Making and Information Systems in the Justice System

ABSTRACT OF THE DISSERTATION

Crime, Emergency, Discourse and Technology:
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By

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Doctor of Philosophy in Social Ecology

University of California, Irvine, 2014

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The 9-1-1 emergency response system has become a taken-for-granted part of everyday American life to the extent that it is virtually invisible to scholarship and social discourse. This project presents a joint historical and ethnographic study of the 9-1-1 system that follows common threads that run through the creation of the 9-1-1 system and the daily routines of dispatchers today. Chapter 1 demonstrates how the widespread fear of crime made a universal emergency number possible in the 1960s despite objections from emergency service leaders. Chapter 2 describes on the social and environmental organization of modern dispatch practices based on observations at 5 dispatch centers in southern California. Finally chapter 3 focuses on the increasing integration of visual information into dispatch practices that have traditionally been accomplished through verbal communications. These chapters are united by common themes as social and political discourse continues to shape the 9-1-1 system as a whole and the day-to-day experiences of emergency dispatchers.

Foreword: A Tense Situation

In an early afternoon in late Summer of 2010 I visited Mid City dispatch for the first time. At the time I was interested in gaining access to 9-1-1 call records for a project and was visiting the department's dispatch supervisor. After a short discussion, the supervisor suggests that doing live observations would be easier than getting official records released and invites me over to the communications room. The room is dimly lit by filtered sunlight and the glow cast by the wall of screens at the front of the room. It's a "routine" afternoon she says and starts to explain the activities taking place. The large central screen shows a prisoner being loaded for transport to county jail. Here is where a prisoner is most likely to resist, she says; they see the truck and think "I don't want to get in that thing." This prisoner hops nimbly into the truck like a kid getting into a school bus. "He got in right, he's probably been to jail before" she comments, also seeing his demeanor.

The nearest dispatcher takes a moment to turn around and tell us "all we are getting are Alert calls right now." The Alert system allows the department to put out a notice to all registered smartphone users in a geographic area. In this case a man with Alzheimer's has gone missing, and an Alert was issued near his last known location with his description and instructions to call 9-1-1 if he is seen. The incoming calls are vacuous, callers asking why they got a message, or calling to request to be removed from the system. The dispatchers are irritated but maintain their poise during calls.

Suddenly the mood in the room in the room shifts. The largest shopping center in town has received a bomb threat: a backpack left at the side of the off-ramp entrance to the center. "Shouldn't highway patrol take this?" one dispatcher says out loud. "When do they take anything?" another one says, drawing a short laugh from the others. Meanwhile the dispatcher closest to the front of the room begins to cycle through camera feeds from the shopping center, looking for a view of activities on the ground. As events on the scene unfold, the dispatch team takes over coordinating the units on site. Using security cameras at the shopping center, the dispatch team provides tactical support for units on the ground: scanning the area for suspicious persons or vehicles, directing the appropriate units to those locations, and keeping an eye on them from above.

Introduction - Making the Link between Crime and Emergency

The 9-1-1 emergency system has become a taken-for-granted part of daily life in the United States. Although painted as an always-ready and always-there resource, 9-1-1's penetration into daily life is far from passive, but at active and consistent force that shapes our perception of security and preparedness. Reminders to call 9-1-1 "in case of emergency" are everywhere, and 9-1-1 calls appear regularly in media and popular culture. Funny 9-1-1 calls, horrific calls, and "hero" calls about children dialing 9-1-1 appear daily in mass and social media. Following every tragedy, from school shootings to 9/11, the release of emergency calls to the media marks the beginning of a media-produced shared horror that urges the audience to place itself in the caller's, and sometimes the victim's, position. The emergency response system embodied by 9-1-1 has successfully become such a natural part of social life that it resists being drawn into social, political, and scholarly discourses. We have in a short historical time created a vast system which has effectively brought *"*all emergency" under the gaze of police, and we have done this so effectively that this system remains absent from conversations about the culture of control and security that has arisen alongside the *war on crime*. This project sets out to dispel the social invisibility that cloaks the 9-1-1 system, to reveal the system and its practices as *contingent* on social and political forces, and to promote critical inquiry into the *progress* and evolution of emergency response practices.

This project joins historical and ethnographic research to accomplish that goal. The first chapter examines the creation of the creation of a universal emergency number in the 1960s through an analysis of archival sources. Although painted as a "technological wonder," universal emergency numbers appeared as early as in the 1920s in Great Britain. Instead this chapter demonstrates that the 9-1-1 system was an innovation in governance, a response to the growing widespread fear of crime and civil unrest that marked the 1960s. The 9-1-1 system was rooted in

the war and crime, built in the wake of the 1965 crime commission, and has effectively rendered law enforcement as the primary lens through which all emergencies are seen. To "call 9-1-1" is synonymous with "calling the police" even while those phrases continue to bear very different connotations.

The remainder of this project carries the analysis into the daily operation of this system through the ethnographic study of study of 9-1-1 dispatch practices at five dispatch centers in southern California. The second chapter focuses on updating our understanding of emergency dispatch practices. In the main, dispatchers are still depicted in scholarly literature as solitary switchboard operators and emergency calls still examined through individual call records. This chapter provides a rich description of the social and physical dispatch environments, and demonstrates that both individual calls and dispatch practices cannot be thoroughly examined through an analysis of individual calls. Rather than working in isolation, dispatchers work in in dynamic social groups and environmental spaces, and these settings have the capacity to meaningfully impact emergency outcomes.

The final chapter focuses specifically on the integration of visual technologies into routine dispatch practices at these five centers. Technological innovations in emergency response are often designated as technological progress. However, as in the 1960s, such innovations are often instigated by social and political forces even when framed as technological advancement. Without clear directives for their use from the FCC, such technologies are applied in very different ways from center to center with varying efficacy and purpose. The widespread use of personal devices, smart phones in particular, has transformed the way that people communicate and the kinds of communications possible faster than the 9-1-1 system has adapted. As we move towards the complete integration of visual links between callers and emergency call-takers, this

chapter addresses how "seeing" is accomplished in emergency dispatch centers, and how seeing emergency through the lens of law enforcement shapes that vision.

Ultimately, this project aims to be relevant to both academic and dispatch audiences by connecting conceptual and theoretical elements with their meaningful impact on dispatch practices. By no means is this an exhaustive analysis of the emergency response system but instead a set of presentations that utilize common themes to connect the emergency response system with social and scholarly endeavors. Rather than trying to map dispatch practices onto a singular theoretical framework, a pragmatic approach is favored that remains accountable to the lived daily experiences of those 9-1-1 dispatcher who participated in this study and connects concepts with their impact on dispatch practices and emergency response outcomes.

Literature Review – Conceptual and Practical Tools for the Study of 9-1-1

This project borrows from research in a wide range of disciplines, drawing heavily from linguistics, the sociology of law, and cognitive psychology. Linguistic anthropology has by far contributed the greatest body of literature to the study of emergency response telephone calls, particularly though the application of *conversation analysis* to 9-1-1 emergency calls. Many aspects of this project build upon previous linguistic examinations of emergency calls for service, either through the application of these works or as a response to limitations of the linguistic paradigm. The greatest of these limitations is that previous examinations of emergency calls for service have essentially ignored the social and political context, local and national, that surrounds the emergency response system. Sociolegal scholarship provides concepts, heuristic tools, and theories for examining the relationship between the 9-1-1 system and the war on crime established in chapter one and its later consequences on dispatch practices. Another problematic aspect of linguistic analyses is that they treat the conversation between caller and call-taker as

occurring in social isolation. However, dispatchers work in dynamic social environments, often with many dispatchers engaged in a variety of emergency response tasks. The work of cognitive psychologist Edwin Hutchins serves as a model for examining how tasks are accomplished across a group of interconnected actors and the factors that can influence their outcomes. These fields were selected as a basis for this analysis because they provide useful concepts for the analysis of emergency dispatch practices. This project does *not* an attempt to situate the analysis of emergency calls within any one specific theoretical tradition, but instead endeavors to render the system accessible to myriad perspectives. The tool and concepts used from these fields are discussed in greater depth below.

The Linguistic Organization of 9-1-1 Calls

By chance, the creation of 9-1-1 in the 1960s coincided with an emerging movement in sociology called *ethnomethodology*, or EM, pioneered by Harold Garfinkel. Revisiting the ideas of Emile Durkheim, one of sociology's founding figures, EM was broadly premised on the idea that "the objective reality of social facts *as* an ongoing accomplishment of the concerted activities of daily life […] is a fundamental phenomenon" (Garfinkel, 1967, p.3). EM would influence two interrelated fields that have been the principal source of academic work using 9-1-1 calls as the unit of analysis, the study of work and conversation analysis (CA), which found the nation's new 9-1-1 number to be a source of novel interactions for study.

In the early 1960s, some linguistic scholars felt that the study of language had reached a crisis point. In 1964 sociologist Erving Goffman, commenting on the study of speech behaviors, said "It hardly seems possible to name a social variable that doesn't show up and have its little systematic effect upon speech behavior" and "alongside this correlational drive […] there has been another drive, just as active, to add to the range of properties discoverable in speech

behavior itself." Goffman apprehended, however, an uncomfortable conceptual tension in the iterative churning between these two approaches to the study of language. According to Goffman, conceptualizing speech as independent from actual occurrences of talk in the real world inevitably broke down and "at a certain level of analysis, then, the study of behavior while speaking and the study of behavior of those who are present to each other but not engaged in talk cannon be analytically separated." In short, *social situations* were represented as nothing more than an intersection of actors reduced to a set of attributes that determine their speech behavior.

In response to this situation, many scholars turned to the study of dialogue occurring in a wide array of social situations, including "calls for emergency assistance" to demonstrate that context was critical to the interactional organization of many daily conversations. Subsequently, through the 1980s a body of literature emerged examining the organization of these calls. Whalen defines calls "as *ongoing and developing sequences of actions*, actions that get formed up into "calls"…[Calls] are observably oriented to by staff in innumerable ways to name, explain, describe, account for, and otherwise identify the events that make up their everyday work world." (J. Whalen, 1990, emphasis in original). Zimmerman adds "the term 'call' does not simply refer to instances of telephone contact, but what is accomplished by **parties** to those contacts as they interact in the pursuit of **their** respective concerns" (Drew, 1992, emphasis added). Zimmerman's chapter "The Interactional organization of calls for emergency assistance" in *Talk at Work* builds on much of the previous decade's published research on emergency calls and was instrumental in my preparation to observe dispatchers working in 9-1-1 call centers for this project. At the same time, Zimmerman's work is both exemplary in providing a number of useful tools for examining emergency calls and emblematic of the limitations of this style of research. Some of his findings and their strengths and weaknesses are discussed in detail below.

Zimmerman begins by defining a typical "configuration of sequences for managing calls for emergency service" and goes on to describe the conversational variations that take place across these sequences. A call generally consists of a caller (C) and a call-taker (CT) who speak in *turns*. These turns form larger conversational segments called *sequences*. According to Zimmerman, a typical emergency call consists of several component sequences oriented around a different function in the emergency response process.

Table 1.1 – Zimmerman's configuration of call sequences

Pre-beginning
Identification/acknowledgement
Request
Interrogative series
Response
Closing

The pre-beginning refers to the call-takers prepared introduction given at the beginning of every call. Often this is a categorical identifier such as "mid-city emergency" or even just "9-1-1." The identification/acknowledgement sequence involves the C's identification and CT's acknowledgement. The request sequence is organized around the C's request for assistance and the CTs acknowledgement of the request. The interrogative series is a sequence of question and answer turns where the CT works to gain information necessary and relevant for institutional action (or inaction). The response sequence is organized around the course of action that the dispatcher has selected for the call. Finally the closing of the call ends the CTs contact with C, although future contact may be made and the C may continue to communicate with units responding to the emergency.

Despite this general framework for the organization of emergency calls, calls rarely follow the ideal pattern. Zimmerman charts some of the variations that can take place in these sequences, which manifest as predictable departures from a "normal" call based on the traits of

the caller. Many callers remain anonymous throughout an emergency call and often signal their distance from a reported emergency in their opening report. Statements such as "I just saw an accident" or "There's a man collapsed on the street" immediately make it clear that the requested assistance is for another party. Callers reporting an emergency from their place of work will often identify categorically by their place of employment, for example with an introduction like "This is loss-prevention at the Main Street Target." An inventory of these systematic regularities in callers' speech based on their personal characteristics and circumstances will not be presented here. For the moment it is enough to characterize these central findings in the linguistic analysis of emergency calls for service, and such linguistic features will be identified and defined when relevant to this project.

Some scholars who study of emergency calls for service have also approached emergency calls as an institutional occasion of "work" and regard the *dispatch package* as the institutional "product" that a CT produces during a call. The dispatch package is "the codified information required to dispatch assistance" and as its name suggest, the package represents the information that is passed on from the call-taker to responding units. Depending on the scenario the CT may have to deal with a number of challenges to obtain the information needed, and the information needed may change from case to case. Zimmerman particularly focuses his research on the examination of calls from "hysterical callers," callers who experience and display extreme emotional states. In his analysis "hysteria" manifests through expressions uttered during a call (e.g. "Oh my God!" or "She's dead! She's dead!"). As before, the problem of hysterical callers is reduced to a series of conclusions about the predictable impacts on the interactional organization of an emergency call for service and a taxonomy of utterances that typify hysterical calls, such as "shock tokens" and "pain cries." Zimmerman concludes "The various expressions and modes of

speaking that call takers tend to identify as "hysterical" are problematic to the extent they distort callers' speech, affect the coherence of their utterance, or pose further tasks for the call taker that delay acquisition of necessary information or interfere with the delivery of instruction."

Ironically, an article by Albert Meehan, a colleague and often co-author with Zimmerman, exposes the shortcomings of the linguistic approach from a sociological perspective. In his article "Assessing the 'Police Worthiness' of Citizen Complaints to the Police: Accountability and the Negotiation of 'Facts'" Meehan examines the callers role in negotiating the "facts" used as a basis for institutional action or inaction. During one period of his study, Meehan observed that a "gang problem" emerges within public and political discourse during an election year and proposes that "the availability of police-related categories may influence callers to account for their problem in terms of that category." Meehan goes on to show that callers reporting a complain involving youths often found their complains formulated as "gang" problems, and that securing a police response often hinged on the caller's acceptance of the "gang" formulation. Even in cases where none of the disruptive activities are described, labeling the youths as a "gang" was sufficient to warrant a police response. Thus Meehan demonstrates that emergency response classification is not only responsive to factors identifiable within the utterances of an emergency call for service but "also responsive to the larger political framework to which police are accountable." Meehan's work crystallizes the inadequacy of a linguistic approach to account for factors beyond the face-value of the utterances that make up an emergency call. Meehan demonstrates the power of "categorizing" a complaint to mobilize or deny institutional resources to a caller. Zimmerman and other linguistic scholars often refer to emergency call-takers as "gatekeepers" who mechanically separate, redirect, and respond to calls like neutral automata. While these scholars touch on the role of classification in emergency

response, the *gatekeeper model* prohibits examining how this classification is contingent on the immediate social and political context and negotiated between caller and call-taker.

This project extends this previous linguistic research in three ways. First, the relationship between dispatch practices and socio-political discourse is charted in much greater detail and at multiple levels from the national to the local. Second, dispatch *work* is situated within the operations of a dispatch center. We will see that even the organization of dispatch *talk* cannot be explained without accounting for the dispatch center as an interlocking network of actors working to accomplish "emergency response." Finally, the increasing application of visual technologies has rendered "talk" into one of only several ways in which emergency call-takers can engage and gain information to execute dispatch tasks. This project thus examines dispatch "talk" and practices in three contexts: social and political discourse about emergency, the social network of emergency response call-takers, and the information environment surrounding emergency calls.

Governing "Emergency" Through Crime

A number of scholars have attempted to chart the drastic shift in social order that coincided with the "war on crime" that began in the 1960s. Jonathan Simon has offered the term "governing through crime" as shorthand for the claim that "Americans have built a new civil and political order structured around the problem of violent crime." In his book by that name, Simon demonstrates that through the war on crime, crime control has become model for governance at many social levels. Politically he traces the ascendance of prosecutors as politicians, but also examines how governing-through-crime attitudes shape family, education, and the workplace. Problems in all three of these arenas are increasingly framed through analogy to crime and their solutions legitimized by their similitude to crime-control ideology.

In 2010 I had the opportunity to attend a symposium titled "Visualizing Governing Through Crime" whose "objective was to visualize–through the use of digital photography–how the logic of crime control shapes myriad institutions across the regions of [California]." These projects powerfully captured and made visible the capacity for police/prison technologies to shape physical spaces not thought of as sites for "law enforcement," from upper-class communities, to gentrified neighborhoods in downtown LA, to primary school environments. The securitization of primary schools through prison technologies, for instance, was here demonstrated through images showing razor-wire atop schoolyard fences and cameras overlooking every doorway and playground. Upper class communities employ fortress-like walls and systems of authorization checkpoints to ensure that workers, and the less-extravagantly-rich, remain in their proper places. This symposium was formative for this project in two ways. First, many of those projects presented evidence for "governing through crime" as visual similitude with law enforcement spaces. This approach left me wondering, not "that" schools increasingly resemble jails, but how such changes come to be widely accepted in day-to-day discourse of school security. Second, it begs the question that while we may *see* that these social spaces increasingly resemble law enforcement spaces, how do those institutions in turn *see* the social world?

Simon's "Governing Through Crime" is largely descriptive rather than theoretical. Thus it is easy to view a social phenomenon or trend and label it as an example of governing through crime, but it lacks the capacity to index the mechanisms by which governing through crime takes place. In many ways this project attempts to chart one such mechanism through an analysis of the discourse surrounding crime and emergency that led to the creation of a national emergency number in 1969. Simon "argues that stating with the federal Omnibus Crime Control and Safe

Streets Act of 1968, crime legislation in the United States has had […] a way of imagining the needs of the citizenry as framed by the problem of crime." The first chapter of this work is in many ways a deep exploration of this argument, which isolates specific instances of such imagination and their power to shape institutional action by framing social problems in a new light. In particular, this chapter details how the rationale behind the war on crime made the idea of a universal emergency number politically possible when proposals for such a system had failed only a few years earlier. The subsequent chapters also touch on the continuing role of crime discourse on local dispatch practices and the application of visual information technologies in emergency response centers.

Dispatch as a Social Task

Linguistic analyses of emergency calls for service inevitably treat emergency calls for service as dialogues that occur in relative isolation. Even when scholars acknowledge the presence of other parties in the dispatch process, these parties are accounted for only insofar as they appear in call transcripts. Early researchers generally observed that incoming calls were the sole means for dispatchers to gain information relevant to processing a call. However this is certainly no longer the case as dispatchers have access to a variety of information sources and types from local security cameras to internet maps to national law enforcement databases. In the formative stages of this project I had the opportunity to visit a dispatch center and briefly observe dispatchers at work at the dispatch center of a city police department. Far from working in isolation, I witnessed dispatchers working collaboratively to respond to the ever-shifting needs of both the community and the department. Tasks moved between dispatchers, or involved several dispatchers at once, and often conversations with callers reflected only a portion of the communication and activity taking place in the department. A large portion of this project is

dedicated to identifying key elements in the cooperative social efforts that take place in daily dispatch practices.

The conversations that take place between emergency callers and call-takers occurs within a much larger system of information exchange and activity. The work of cognitive psychologist Edwin Hutchins was particularly useful as basis for approaching dispatch as a social system. Edwin Hutchin's *Cognition in the Wild* presents a case study of *socially distributed cognition*, cognitive processes that are distributed across some social group. Based on his work as a naval psychologist, Hutchins examines in depth how the joint cognitive tasks necessary for navigation are accomplished jointly by members of the crew spread across many parts of naval vessels. In such vessels, each member of the navigation team is accountable for observing and communicating different kinds of information so that the receiving parties can apply that information directly to the task at hand. For example, tasks such determining a fix – a precise physical location - for the ship require spotters across the ship to identify at least 3 landmarks and provide their angular position relative so the ship; then the ship's location is pinpointed by the intersection of the rays originating from those landmarks at the angle provided. Thus, the visual perceptions of spotters are transformed into data, communicated to a central location, and ultimately transformed into a point on a map used to make decisions about ship speed and heading.

Cognition in the Wild provides a basis for expanding an analysis of dispatch practices beyond the examination of 9-1-1 call transcripts by regarding dispatch as a task accomplished by multiple dispatchers who communicate through several mediums. Significantly for this project, Hutchins demonstrates that properties of the communication and information can independently have an impact on the ability for a cognitive network to make accurate and rapid decisions and to

repair its mistakes. Hutchins also notes that access to different kinds of information allow for different tasks to be completed. As visual technologies are integrated into dispatch practices, Hutchins' work calls attention to the fact that dispatchers are simply using this information to do the same things better but are capable of performing entirely new kinds of tasks, and it exposes the possibility that the organization of information systems, both technical and social, has the capacity to impact emergency response outcomes. Both of these themes will be developed as the later chapters of this project examine observations of dispatch practices across several dispatch centers.

Methods – Field Study and Archival Analysis

This project is a joint historical and ethnographic study of the 9-1-1 system. The first chapter presents an historical examination of the creation of the 9-1-1 system in the late 1960s through the analysis of archival materials. The goal of this chapter is to establish that, and how, the creation of the 9-1-1 system was contingent upon the "war on crime" launched by President Johnson in 1965. Rather than solely focusing on the 9-1-1 system, this chapter places arguments and claims about the need for 9-1-1 against those for a failed attempt to create a universal emergency number in the Los Angeles metropolitan area in the early 1960s. The second and third chapters present an ethnographic study of modern dispatch practices based on observations conducted at several dispatch centers in southern California. The research methods used are discussed in depth below.

Materials for the historical analysis presented in chapter 1 were obtained through a mixture of archival sources. Newspapers archives for the Los Angeles Times and New York Times, along with several smaller publications, provide the majority of material for inquiry into social discourse on crime and emergency. In order to examine political discourse this project

relies heavily on The American Presidency Project at UC Santa Barbara, which has archived "most of the public messages, statements, speeches, and news conference remarks" of American Presidents. These public statements are transcribed and searchable, allowing key words and phrases to be identified and placed in context. For example, a search of the word "crime" can reveal how presidents spoke about crime differently across different periods. Materials also include reports from the 1965 crime commission and communications between White House staff and the Federal Communications Commission (FCC).

These documents are analyzed through a combination of content analysis and conversation analysis. Content analysis is used to characterize trends in topics related to crime and emergency in social and political discourse. While "social discourse" and "political discourse" are often referred to as abstract bodies to describe the general way in which people or politicians talk about some problem, the complete indexing of presidential statements and newspaper articles also opens up the possibility of examining particular structures within these bodies of text and speech. I borrow from conversation analysis to identify key structures in these documents and trace them as they are deployed in articles and statements about the need for an emergency number across the 1960s. These structures are *formulations* of crime and emergency response and social problems, and the *exemplary* scenarios that speakers and authors used to illustrate the need for a universal emergency number.

In analyzing presidential statements, newspaper articles, and other documents about crime and emergency, I pay particular attention to *formulations* of crime as a problem for governance. A formulation is simply a representation, but the word has come to have a variety of meanings in a variety of fields. In computer science or mathematics a formulation is the rendering of some problem into a set of basic statements – premises – *that form a basis for*

identifying a solution (Heylighten 1988). Formulations are also a common feature in many types of discourses and are often used to clarify an ambiguity or to precipitate action. In the context of discourse analysis Garfinkle and Sacks (1970: 350, 351) described formulations as "some part of the conversation [that is] an occasion to describe that conversation, to explain it, or characterise it, or explicate, or translate, or summarise, or furnish the gist of it." In short, a formulation in discourse analysis is a statement of "what-is-going-on." For the purposes of this project I am particularly concerned with formulations of *crime as a problem for governance* in presidential statements and I incorporate elements from both definitions of a formulation. I want to know what salient features of "the crime problem" are highlighted in presidential statements, how such formulations are used as a basis for action, and how these statements are used to reorient the audience, often Congress, to what-is-going-on with the crime and crime control. Formulations of crime should not be confused with *theories* of crime. A formulation of crime as a problem will depend on the status of the person or organization attempting to "solve" that problem. Federal, state, and local authorities may formulate crime in different ways based on their respective powers.

Exemplary scenarios are those hypothetical situations deployed by speakers and authors when addressing crime and emergency. For example when arguing *for* an universal emergency number, speakers or authors would often invoke scenarios beginning prompts "imagine if" or "imagine you are" in order to make their proposal appear like the clear solution for that scenario. Both formulations and exemplary scenarios, I argue, are ways in which "governing through crime" takes place as they encode and reinforce certain beliefs about crime, emergency, and government authority.

The ethnographic portion of this analysis is based on observations conducted at 5 dispatch centers in southern California. Research consisted of approximately 200 hours of observation conducted in five public-safety answering points (PSAPs) across southern California. All five of these PSAPs were located in police departments serving urban jurisdictions. Observations were conducted as "sit-along" sessions with dispatchers appointed by the dispatch supervisor. During these sit-alongs the researcher sat with one or several dispatchers for between 2 and 4 hours to listen and observe as they received and responded to emergency calls for service. Such sit-alongs are common in the training of new dispatchers and did not require any modification to the dispatchers' systems or work environment. In 4 of the 5 dispatch centers the researcher was connected with a headset to listen along with incoming calls but was muted to guard against any accidental sounds during the call. In one center the technology to mute a headset was not available, so observations did not include listening to the incoming call. No electronic recording was allowed during these sessions, but the researcher was allowed to take limited notes on a small paper tablet. Field notes were written immediately following each sit-along and no identifying information about callers, dispatchers, or department operations was recorded.

Four initial sites were selected through the active recruitment of departments that had a history of working with academic researchers or had a pre-existing connection with the researcher. A dispatch supervisor at one initial site was able to contact a colleague and provide an introduction for observations at a fifth site. In each department, the dispatch supervisor selected dispatchers for the researcher to observe. These selections were based on the supervisor's knowledge of their dispatchers' individual characteristics, and supervisors often voiced a preference of seating the researcher with talkative, amiable, and outgoing personalities.

Consequently these dispatchers often initiated conversations with the researcher or offered unsolicited insight, explanations, or rationale behind their practices. Although unplanned, these conversations provided insight into every aspect of work as a dispatcher, from technical dispatch details to the challenges of being a parent while working long and odd dispatch hours. The participating dispatch centers and their communities are introduced below.

Five Centers, Five Communities

When a person dials 9-1-1 their call is routed to a control office where it is transferred onto the 9-1-1 network. From there it is sent to a corresponding public safety answering point, commonly referred to as a 9-1-1 call center. The FCC maintains a publically-available registry of these 8400 PSAPs providing any important information and the operational status of each point. A "primary" PSAP is a PSAP where a call will be initially transferred after the number 9-1-1 is dialed, while a "secondary" PSAP can only be reached via transfer from a primary PSAP. Each of the call centers that participated in this research is a primary PSAP located within a police facility and associated with a police jurisdiction. Four of the sites served city jurisdictions while one center provided emergency response for a university campus and its associated resources. These dispatch centers and their communities are introduced below.

East City is the smallest town in this study with a population of 35,000 covering 14 square miles near the border of North County. East City is known as a well-to-do college and retirement town. East City's population is approximately 75% white and 15% Asian with small proportions of African-American and Hispanic residents. Its residents have a median annual income of $75,000. The East City emergency dispatch center is located in the interior of the city's police department, a civil-defense era structure that resembles a concrete bunker. The dispatch room is small and barely holds two dispatch stations, each with a 2x2 grid of computer

monitors that serve as the dispatchers' primary interface for work. The room has a dark, cloistered atmosphere and holds little more than what is needed to sustain two occupants. However, the dispatch room is also centrally located within the building and receives frequent visits, with two entrances on opposite sides of the room giving it quick connections to the department's front desk, jail, and administrative offices. Officers and administrators visit frequently, but they often stay in the doorways.

Big City in North County is the largest city in this study, with a population measured in millions spread across hundreds of square miles. Big City's residents are predominantly White or Hispanic, 10% Asian and 10% Black with a strong mixed-race population. Big City's dispatch center is housed in its own secure building which is several stories tall and designed to serve as a center for coordination in case of a major disaster. The structure is not only home to the 9-1-1 dispatch center but also functions as the city's disaster response headquarters. The dispatch room is well lit with a high ceiling and holds dozens of dispatch desks organized loosely into clusters. Each desk has six horizontal computer monitors and backup equipment dating from a pre-computer era to use in case power is lost in a disaster. The front of the room is marked by the watch commander's desk, an elevated platform that acts as a command bridge for dispatch activity. From there supervisors coordinate activity within the dispatch center and occasionally take a hand in critical incidents taking place in the field. Serving such a large population, Big City dispatchers almost never have more than a few seconds between calls, and a constant buzz of activity fills the room.

West City is a town of nearly 90,000 covering 10 square miles, near the line between North County and South County. The town's residents are nearly 25% white, 25% Hispanic, and 50% Asian with a median annual household income near $50,000. The city is

divided into clearly demarcated neighborhoods along both racial and gang territory lines, and gang associations were a common feature of calls to 9-1-1 calls in West City. The West City dispatch center is located in a corner of the city's police department overlooking city hall. The structure was completed only a year before observation took place, and the dispatch center still shows signs of this recent transition. The room holds three half-cubicles used as dispatch desks, but these units occupy only a portion of the room. Each desk holds 5 monitors aligned horizontally with some shared resources displayed above the cubicle walls. A console across the room holds video equipment for controlling and viewing the city's intersection cameras. The remainder of the room is completely empty.

Mid City is a growing city of nearly 250,000 residents covering 70 square miles in the heart of South County. Mid City residents are nearly 50% white, 40% Asian, and 10% Hispanic with a median annual income near $85,000. Mid City is known as one of the safest cities in the county. The Mid City dispatch center fits 5 dispatch desks in half-cubicles and a supervisor's desk which is also equipped for dispatch duties. These stations are oriented around a wall of the dispatch center with a trio of large screens used to display video feeds from the city's public security cameras. A small enclosed guest area serves as an antechamber to the dispatch center where visitors can view the dispatch center, and several groups of girl scouts visited during research.

The final site participating in this study was the dispatch center for a university campus in South County. Campus jurisdiction includes a relatively small number of dwellings and residents, the main campus, and a number of facilities spread out across the county. Campus dispatch is housed in the campus police structure and holds 3 dispatch consoles. Two of the consoles are in adjacent half-cubicles facing the campus while an elevated third console behind

them serves as the dispatch supervisors work station. Campus' size and disposition are markedly different from city jurisdictions, but despite its small size they often face situations that are not common in city jurisdictions.

Together these departments and communities reflect a range of characteristics, many of which have a bearing on the day-to-day flow of operations and dispatch practices. From differences in funding, resources, and facilities to varying community issues, leadership, and organization, each of these departments face common and uncommon situations every day. The application and utility of visual information technologies differed greatly from site to site. For dispatch workers, this project aims to identify common elements of information organization for successful emergency response outcomes.

Intermission

The following chapters are intended for a broad audience including lay people, emergency response workers, and academics. These chapters cover a range of topics in emergency response, but are neither wholly contiguous nor disjointed. Instead, they follow common threads through multiple levels of the emergency response system. The narratives are constructed to be readable, and enjoyable, but illustrate that emergency response is contingent on the surrounding social world. Together these strands and narratives provide shape and substance to an often-invisible system, but this project is by no means a complete and total accounting of the 9-1-1 emergency response system. Instead the goal is to render the 9-1-1 system more visible for future scholarship and to increase the capacity of individuals, or even institutions, to determine how our emergency response system functions. Certainly, issues of emergency service delivery reach across a wide swath of social issues: race, gender, community, culture and will be apparent in the text and subtext of many narratives. These connections are each due their own

complete analysis, and such a project is far beyond the scope of a single work. No doubt emergency response can be integrated into a number of existing and emerging traditions of social analysis, and all readers are encouraged to make their own connections.

Chapter 1 – The Creation of 9-1-1

From "Anarchy" to "Wonder"

On May 27, 1999, Congressman Robert B. Aderholt of Alabama honored the City of Haleyville, Alabama as the home of America's first emergency dial telephone service saying, "Today anyone can dial 911 in any type of emergency, such as sickness, fire, police, or ambulance and a policeman on duty will immediately summon the help needed." Just over 31 years earlier the March 1, 1968 edition of Life magazine featured an editorial on the newly-announced nationwide 9-1-1 emergency number in which the author wrote, "The wonder of it all is that it took the nation with half the phones in the world until 1968 to decide that the traditional means for reporting emergencies are close to anarchy." Yet in 1968 the idea for a universal emergency number was by no means a new or novel concept abroad or at home. Great Britain's "999" number began over three full decades earlier in 1937 as London's city-wide emergency number and had evolved into that nation's universal number. In 1961 officials in Los Angeles and Orange Counties began to consider several plans to implement a regional uniform emergency number, but ultimately in 1965 a pilot project called "H-E-L-P" was defeated by the pocket-veto of Governor Pat Brown, only 3 years before the national 9-1-1 emergency number was announced. Why did these "traditional means" for reporting emergencies persist for so long in the United States, and what changed in the 1960s to make those traditional means seems "close to anarchy?" We can find our first clue in the words of Congressman Aderholt himself that in *any type of emergency* we can dial 9-1-1 and a *police*man will summon the help needed. If crime is only one type of emergency, how has law enforcement become the primary institution of our emergency response system?

The modern emergency 9-1-1 system emerged directly from the same series of events that ignited the federally-led "war against crime" launched by President Johnson in 1965. This chapter presents a 'history of the present' for the emergency 9-1-1 system. The goal is not to provide an exhaustive account of 'what happened' through the linear presentation of dates and events, but rather to detail the emergence of the 9-1-1 through its relationship to the war on crime. In doing so, I highlight the relationship between "crime" and "emergency" established by the war on crime and which I later argue remains embedded in the 9-1-1 system through its relationship to the war on crime. Thus I argue that this relationship may influence the way civilians manage both "emergency" and the threat of "emergency" in daily life. As I construct the history of the 9-1-1, I also argue that the modern 9-1-1 system was made possible by the transformation of crime from a *social problem* to an *emergency of governance* in the mid-1960s. In turn crime became *the* emergency around which this system was imagined and organized. The significance of this structural organization reaches beyond the handling of emergency calls. The primacy of law enforcement in handling emergency situations goes hand-in-hand with the increasing sense that when something unexpected or accidental happens, *someone* must be held accountable. Anthony Giddens explains Ulrich Beck's notion of a risk society as "a society increasingly preoccupied with the future (and also with safety)" (Giddens 1999, 4). If the police are responsible for managing emergency, then such an arrangement lends itself to the policing of "risk," of the accidental, of the unforeseen, and even of the unforeseeable.

Why Study The Creation of 9-1-1?

The 9-1-1 system is a conceptually simple but practically complex system that straddles the boundaries between individuals, state authorities, and private corporations. I first became intrigued in the study of 9-1-1 phone calls and the 9-1-1 emergency response system through

Don Zimmerman's "The Interactional Sociolinguistic Analysis of Individual Calls for Emergency Assistance" in Paul Drew and John Heritage's *Talk at Work,* a collection of studies in conversation analysis. Drew and Heritage's anthology is a collection of works that apply conversation analysis to "work" in a variety of *institutional* contexts usually marked by three characteristics:

- An orientation by at least one participant to institutional tasks and functions.
- Constraints on what the participants will treat as allowable contributions to the conversation.
- Special reasoning, inference, or implication within the conversation.

Coincidentally, conversation analysis emerged in the late 1960s at approximately the same time that the 9-1-1 system was spreading across the country, and these emergency calls were a frequent object of linguistic study. These analyses captured my interest as much from the features of emergency calls that they addressed as for those features they did not scrutinize.

The conversation analysis approach taken in these analyses imagines that there is some basic form of mundane talk against which "institutional" interactions can be compared and then highlights the way departures from this idealized norm are actively managed through in the conversation. Consequently these analyses often highlighted micro-level influences on emergency 9-1-1 calls (i.e. the acceptable lack of a greeting in an emergency) rather than macro-level influences on emergency calls (i.e. social or cultural schema at play within a call). The task-oriented focus of conversation analysis meant that calls were framed by examining how emergency call-takers performed a *gatekeeping* task by identifying an event as some type of "emergency" and then determining the appropriate institutional response. I found that this approach was illuminating but unsatisfying. The gatekeeping model vastly oversimplifies emergency calls and downplays or ignores the active roles taken, and goals attempted or

accomplished, by a caller during an emergency call. Some work has gone beyond the gatekeeping paradigm to address some of these shortcomings. In particular Albert Meehan (1989) has shown that the "police-worthiness" of a complaint and the "facts" of a situation are mutable and negotiated by both participants in an emergency call through the proposal and acceptance or rejection of complaint formulations offered by the call-taker.

My final motivation came from a recent analysis of homicide report emergency calls appearing in the February 2009 edition of *Homicide Studies*. This analysis attempts "to critically analyze 911 homicide statements for the predictive value in determining the caller's innocence or guilt regarding the offense." According to the authors, their "results suggest that the presence or absence of as many as 18 of the variables are associated with the likelihood of the caller's guilt or innocence regarding the offense of homicide" and that there are "up to six distinct linguistic dimensions that may be useful for examination of all homicide calls to support effective investigations of these cases by law enforcement" (Harpster et al. 69). Here was a direct example of supplicants transformed into suspects before any kind of crime had even been officially designated. How is it, I wondered, that the investigative role of law enforcement could so easily be extended into the emergency call itself?

Plan of the Chapter

This chapter demonstrates that the war on crime is responsible for the modern 9-1-1 emergency system and has given the police primary responsibility for responding to "emergency." In order to support this claim the chapter is organized into four parts. The first section outlines the "H-E-L-P" proposal, a plan to introduce a universal emergency reporting number in the Los Angeles metropolitan area in the early 1960s that was ultimately defeated due to criticism from police and fire officials. I focus on the successful claims of emergency fire and

police officials that emergency calls fall within their jurisdictions, and I highlight the exemplary emergency situations used to frame the need for a universal number, namely ambulance and fire emergencies.

The second section examines statements about crime made by Presidents Eisenhower, Kennedy, and Johnson between 1960 and President Johnson's declaration of a "war on crime" in 1965. In this section I show that crime during these years was initially framed as one problem among many urban social problems. I pay particular attention to the way that this class of *urban* problems served as a basis for federal intervention in quintessentially *local* problems by rendering them as mere instances of a national phenomenon and the growing fear of crime victimization that shaped Johnson's changing rhetoric about crime leading up to the declaration of the war on crime.

The third section centers on presidential statements about crime between the launch of the war on crime and the implementation of the 9-1-1 emergency number in 1968. I examine how President Johnson gradually distinguished criminal events from the fear of crime as distinct social problems. I argue that the widespread fear of crime constituted an emergency of governance for President Johnson who believed that governance itself was not possible under conditions marked by widespread social fear. This distinction of crime-fear from incidents of crime created a space for federal action outside of the traditionally established spheres of jurisdiction and a new space in the epistemology of crime for the experience of crime fear and "common sense" knowledge of urban denizens.

The final section focuses on the implementation of the 9-1-1 beginning with its roots in the Science and Technology Task Force of President Johnson's crime commission and following its patch through various official and legislative channels. I focus on differences between the

framing of 9-1-1 and "H-E-L-P" that correspond to differences in the framing of crime as a problem that evolved around the war on crime. In particular I focus on the explicit way in which crimes – specifically street crimes – were used to frame the need for a universal number and on the effective negation of jurisdictional claims by non-police emergency officials to calls reporting their respective emergency situations.

Foundational Texts and Theories

This analysis presents the history of 9-1-1 through two separate attempts to establish universal emergency numbers in the United States: Los Angeles "H-E-L-P" and 9-1-1. Los Angeles City officials first proposed the idea for H-E-L-P in 1961, and a bill approving a pilot project made its way through the California legislature before being defeated by the pocket-veto of Governor Pat Brown in 1965. The 9-1-1 emergency number was announced early in 1968, and it was based on the recommendation of President Johnson's 1965 crime commission. Each of these initiatives will be placed in the context of presidential statements regarding crime in their corresponding time periods. This contextualization allows me to consider how presidential rhetoric about crime changed in the 1960s and to subsequently question the role that those changes played in the failure of "H-E-L-P" and the success of 9-1-1. This chapter is based heavily on historic newspaper archives of the Los Angeles Times and New York Times and on presidential papers available through The American Presidency Project at U.C. Santa Barbara. Several other relevant publication and documents played a major role as well, including the final report of the 1965 crime commission, the final report of the commission's science and technology task force, and personal communications between Federal Communications Commission (FCC) officials and the White House. These sources constitute the body of this

history, while the following theoretical tools provide the framework to structure and support that body.

A principal claim of this paper is that the evolution of crime from a social problem into an *emergency* of governance enabled the creation of a universal emergency number and that this act was in some way exceptional. I rely heavily on Giorgio Agamben's discussion of "emergency powers" in *State of Exception* to support this claim. Relevant to this chapter, Agemben defines the state of exception, or state of emergency, as a suspension of (some) juridical order in the name of juridical order itself. Perhaps the most difficult aspect of applying Agamben's discussion of the state of emergency to the war on crime is a problem of scale. The state of exception that Agamben addresses is the wholesale suspension of juridical order. Yet "emergency" operates at multiple levels of governance within the typical juridical order as well. Declaring states of emergency during natural disasters, for instance, allows federal resources to be allocated in assistance at state, county, and local levels. Thus I do not claim that juridical order was suspended during the war on crime. However, I do claim that President Johnson regarded the widespread *fear* of crime as a threat to juridical order and that by distinguishing the fear of crime from specific acts of crime he created a new space for federal action in the established juridical order.

California "H-E-L-P": 1961-1965

By the 1960s a number of other countries including Great Britain, Australia, New Zealand, and Canada had already developed or were in the process of developing nationwide emergency reporting numbers. Great Britain's universal emergency number "9-9-9" began as a citywide emergency number for London in the late 1930s and had then spread across the country. The universal number concept, however, was also not new within the United States. In the early

1960s politicians and public utilities officials in Los Angeles and Orange counties in California considered plans to establish a simple regional or statewide emergency number similar to Great Britain's "9-9-9" number. Despite gaining wide support, a measure establishing a pilot project was vetoed by the Governor in 1965 due to criticism from both fire and law enforcement officials. Ironically fewer than three years later Los Angeles County and its dense collection of independent cities would serve as the exemplary case for the necessity of a national uniform emergency number. This section presents a brief account of the "H-E-L-P" proposal for a uniform emergency number in California between 1961 and 1965 through Los Angeles Times articles reporting on the progress of proposal. The goal is to understand why "H-E-L-P" failed in order to later compare that failure against the success of 9-1-1 over similar objections only three years later.

The Los Angeles metropolitan area provided some unique challenges to public service officials responding to emergencies in the early 1960s. By that time police in Boston, Philadelphia, Atlanta, Louisville, Miami, Cincinnati, Cleveland, Chicago, Salt Lake City, San Francisco, and Seattle had all taken steps to streamline calls to the *police* by implementing city-wide police numbers. New York joined this list in 1965 after overcoming jurisdictional issues between its 5 boroughs. Unlike these major U.S. cities Los Angeles County consisted of over seventy independent cities, making for a densely packed network of independent emergency jurisdictions each with its own seven-digit telephone police number amid a confusing network of county and local fire authorities.

In 1961 Kenneth Hahn, a member of the Los Angeles County Board of Supervisors, proposed the idea of a unified emergency number for Los Angeles County. Hahn was inspired to reform the emergency response system by "miracles in communication" performed during

Ranger 7's flight to the moon and by Great Britain's "9-9-9" number. Under Hahn's plan a caller would be able to reach a trained dispatcher from anywhere in the regional service area by dialing an easy-to-remember word such as "H-E-L-P" or "A-I-D." The idea circulated internally, growing to include input from Orange County officials as well, until August of 1963 when an interim Committee on Public Utilities and Corporations disclosed a plan to conduct a feasibility study on the establishment of a single *statewide* emergency number. In an article in the Los Angeles Times, California Assemblyman John C. Williams described the need for such a service as "obviously more acute in the large metropolitan areas of California where persons reporting emergency situations often are confused as to the cities or jurisdictions from which they are calling."

Cases of inadequate emergency response were so common near jurisdictional lines that the Los Angeles Times coined the term "boundary-itis" to describe the phenomenon. The L.A. Times attributed "countless tragedies" to the problem of "boundary-it is" leading to increased emergency response time for callers near jurisdictional lines and to the fact that many people simply didn't know the correct jurisdiction to contact in an emergency. In one case, an Anaheim city rescue squad refused to respond to a call for help that was a mere 30 feet beyond the city limits. In another case, an ambulance driver took a critical patient to a hospital four miles away, yet outside of his jurisdiction, instead of the "correct" hospital twelve miles away, and he was subsequently at risk to lose his license. These stories fed the sentiment that jurisdictional lines should not be a factor when responding to emergency situations. Newspapers regularly included a reminder to keep track of important emergency numbers at the end of these articles, and they occasionally ran public service announcements reminding people to keep a list of emergency

numbers by their phones. However, the fact remained that witnesses to an accident or a brush fire often had trouble notifying the proper authorities in a timely manner.

The proposal for "H-E-L-P" corresponded to a broader attempt to modernize emergency response in the Los Angeles area. The plan was only one of several that city officials proposed to quell the growing pains of California's largest urban center. They also considered several ways to improve to emergency response through the telephone system. At least five separate "universal number" plans were considered, some with one uniform fire, police, and ambulance number, and some with separate numbers for each type of emergency. Supervisor Hahn also recommended free emergency calls from payphones and the use of specially trained call-takers. These call-takers would intercept calls at an outside center and then direct them to the appropriate service, a later point of contention for L.A. area police and fire chiefs. Incidents along jurisdictional boundaries spurred a number of measures designed specifically to place public safety above lines on a map and to improve cooperation between agencies, especially in densely-packed Los Angeles County. The California Fire Chief's Association went so far as to propose a nationwide universal number specifically for *fire* emergencies.

At the same time the City of Torrance in L.A. County was also drafting plans for a new civil defense emergency center. The center was intended to serve as a model civil defense facility, and was funded partially by a grant from the U.S. Civil Defense office. The underground building would house communication equipment sufficient to handle police, fire, and medical dispatching in case of an emergency, and in the case of a war attack the facility was also designed to function as a defensive command center and to house up to 60 persons for a minimum of two weeks. Had any of the prospective county or statewide emergency phone number plans been approved; calls would have been channeled to this new center.

Despite support from politicians and city service officials, the idea of a universal emergency number drew criticism from both fire chiefs and police chiefs as a bill establishing a pilot project was approved by the state legislature in the summer of 1965. The Orange County Fire Chiefs Association favored the idea of a universal number for fire emergencies only but was critical of the idea that calls would be directed to an outside dispatch center. In a move directed at the L.A. Board of Supervisors, O.C. fire chiefs adopted a resolution opposing the outside interception of fire emergency communications and affirming themselves as "strong believers and advocates of home rule." Meanwhile, police chiefs in Los Angeles argued that in an emergency the telephone operator could adequately direct calls and was "the most efficient way of getting help." San Fernando Police Chief Winford Slaughter disapproved of the plan strongly enough to say, "I'm sure [Supervisor Hahn] hasn't studied the problem or he wouldn't have started in on it." Like the O.C. fire chiefs, L.A. Police chiefs believed that the benefits of "home-rule" would outweigh the difficulties and complexity in routing emergency calls through an outside county-wide emergency center. The 1965 California State Legislature passed the bill to establish a pilot project in Los Angeles to test the idea of a universal emergency number, but Governor Pat Brown killed the bill through pocket-veto, citing the lack of support from police and fire officials.

Certain features of the debate around "H-E-L-P" are relevant in understanding why 9-1-1 was later successful. Governor Brown's rejection of "H-E-L-P" rested squarely on the disapproval of police and fire chiefs. The chiefs' criticisms, in turn, highlight certain beliefs about their own jurisdiction and authority that found purchase with Governor Brown. The handling of emergency calls was considered to be within the expert knowledge of police or fire departments. Subsequently, the chiefs successfully argued that the benefits of a uniform number

for emergency reporting would be outweighed by the loss of insider knowledge that a local policeman or firefighter had of his community and department. This calculus of benefits and costs was not empirically established but rested upon the "common sense" of a special kind of *traditionally* established authority under the label of "home rule." Writing in 1964 Terrance Sandalow characterized the invocation of home rule "As a political symbol […] generally understood to be synonymous with local autonomy, the freedom of a local unit of government to pursue self-determined goals without interference by the legislature or other agencies of the state government." On the other side of the debate, in framing the need for a cross-jurisdictional emergency number the proponents of "H-E-L-P" did not imagine any particular type of emergency for the next system to manage. Rather police, fire, and ambulance emergencies were equally represented in news articles expressing support for "H-E-L-P."

Before the War on Crime 1960-1963: Eisenhower and Kennedy

In this section I identify major premises that Presidents Eisenhower and Kennedy utilized to formulate crime problems and the federal government's role in crime-control between 1960 and 1963. My goal here is twofold. First I establish a political context for the failure of "H-E-L-P," and second this section provides a basis of comparison against later presidential statements made about crime leading up to and during the "war on crime." This section therefore represents a "starting point" for federal formulations of crime as a problem for governance and explores the particular instances of crime used to frame "the crime problem" and the federal response to crime in presidential statements between 1960 and 1963.

In his 1960 State of the Union Address, just seven days into the new decade, President Eisenhower predicted some of the challenges of governance facing the nation's growing urban centers in the coming decade, saying

> By 1975 the metropolitan areas of the United States will occupy twice the territory they do today. The roster **of urban problems** with which they must cope is staggering. They involve water supply, cleaning the air, adjusting local tax systems, providing for essential educational, cultural, and social services, and destroying those **conditions which breed** delinquency and crime.
>
> In meeting these, we must, if we value our historic freedoms, **keep within the traditional framework** of our Federal system with powers divided between the national and state governments. [emphasis added]

Eisenhower's address contained three related features common in Presidential statements about crime in the early 1960s. First, Eisenhower imagined crime as a consequence of certain conditions, such as poverty and lack of education, common in the heart of many metropolitan areas. These designation of a problem as *urban* instead of *local* served as an inroads for certain types of locally targeted federal action in the growing cities by framing local crimes as instances of a broader national trend. Second, he emphasized the need to respect constitutionally delegated responsibilities for law enforcement between federal, state, and local law enforcement agencies. Third, the role of the Federal government is to combat those conditions such as poverty, idleness, or lack of education that were seen as causes of crime. This set of statements constitutes a formulation about crime as a problem for governance. The first premise is that crime is caused by conditions that are 'typical' of urbanization across the nation. The second premise is embedded in the reminder to adhere to the "traditional framework:" that states have the primary responsibility and authority to uphold and enforce their laws. These premises together suggest federal action targeting 'urban conditions' *as a method of crime control* that does not infringe upon constitutionally delegated authority between federal and state governments. The federal approach to urban crime targeting these underlying causes was admittedly a long-term solution, with more immediate crime control concerns left to local and state law enforcement agencies.

President Kennedy often spoke about juvenile delinquency in the context of crime and regularly packaged them together as the social problem of "crime and delinquency." In May of 1961 he issued executive order 10940 establishing the President's Committee on Juvenile

Delinquency and Youth Crime acknowledging that "incidence of juvenile delinquency and youth crime has long been recognized as a national problem." The problem of delinquency in some ways served as a forerunner to the later expansion of federal involvement in state and local crime control efforts. Kennedy articulated a clear formulation of the "crime and delinquency" problem when he signed the Juvenile Delinquency and Youth Offenses Control Act in 1961, justifying Federal involvement in delinquency by saying

> Yet for 11 years juvenile delinquency has been increasing. No city or State in our country has been immune. This is a matter of national concern and requires national action. With this legislation the Federal Government becomes an **active partner** with States and local communities to prevent and control the spread of delinquency. Though initiative and primary responsibility for coping with delinquency reside with families and local communities, the Federal Government can provide **leadership, guidance and assistance**. [emphasis added]

Whereas organized crime often transgressed into the realm of federal jurisdiction, juvenile delinquency was a specifically *local* problem located in particular neighborhoods and marked by certain conditions within the city. In the "traditional framework of our Federal system" any number of local or state law enforcement issues would be the responsibility of their respective agencies. Yet Kennedy framed delinquency as a national problem by invoking a trend (increasing delinquency) across time (11 years) and space (every city and state) to define an emergent problem, one exceeding the sum of its parts. The answer to that problem therefore required action beyond but respectful of the traditional distribution of powers among those parts. This action came in the form of partnership and assistance, an innovation of governance matching an innovation in the formulation of delinquency as a problem for governance.

Statements about "crime" by Presidents Kennedy and Eisenhower referred almost exclusively to either organized crime, tax crimes, or to the often-paired problems of "crime and delinquency." They tended to exemplify crime and crime problems in their public statements by those specific types of crimes that had classically fallen under federal jurisdiction. For example,

President Eisenhower made the following comment on law enforcement in the Democratic Party Platform of 1960, "In recent years, we have been faced with a shocking increase in crimes of all kinds. Organized criminals have even infiltrated into legitimate business enterprises and labor unions." Eisenhower's use of organized crime to illustrate the nation's "shocking increase in crimes of all kinds" stands in sharp contrast to the focus on "crime in the streets," such as muggings, rape, or gang violence, that would take over the public and political imagination later in the decade.

Before the War on Crime 1963-1965: Johnson

Lyndon Baines Johnson succeeded to the Presidency in a national atmosphere of fear and uncertainty at home and abroad. Following President Kennedy's assassination, Johnson attempted to maintain the approach that his predecessors had used when talking about crime. However his early tenure was marred by a string of high profile cases that highlighted a breakdown in law and social order. These years between the Kennedy assassination and Johnson's formal launch of the war on crime in 1965 were a period of transition marked by a mixture of "new" and "old" rationales about crime. Ultimately, in an atmosphere defined by the building fear of social disintegration and rampant street crimes, he radically altered the "crime problem" formulation and expanded federal involvement in law enforcement using much the same rhetoric that Kennedy supplied when signing the Juvenile Delinquency and Youth Offenses Control Act in 1961. This section first identifies attitudes about crime in response to several high-profile crimes through newspaper reports. I then consider how these attitudes impacted the way that President Johnson formulated crime as a problem for governance, particularly his construction of *crime fear* as a distinct problem for governance. I argue that the widespread fear

of crime constituted a state of exception, and that *crime fear* served as an exceptional state that nullified emergency service officials' claims to jurisdictional authority over emergency calls.

Coming barely a year after the Cuban Missile Crisis, the assassination of President Kennedy brought the specter of the cold war home onto American soil as rumors and news articles circulated claiming that Lee Harvey Oswald acted under orders from Moscow. This high profile crime became a nexus for anxiety about both foreign and domestic affairs, bringing war and crime together in the same event. On the front page of the New York Times the day of the assassination one headline reads "Kennedy Victim of Violent Streak He Sought to Curb in Nation" while an adjacent article details Oswald's involvement with a radical leftist group, suggesting a Soviet influence in the assassination. The subsequent assassination of Oswald only highlighted the failure of law, order, and justice. Two Sundays after the assassination, the New York Times featured a sermon by visiting Reverend Joseph McCulloch of London under the headline "Kennedy Death Laid to World Failing" in which McCulloch attributed the assassination of President Kennedy to the "'force of disintegration' in all men "which always works to break down what they have been building up."'

The sentiment that the world was disintegrating was intensified by a number of high profile crimes across the country, such as the murder of Kitty Genovese. On the night of March 13, 1964, Kitty Genovese, a resident of Queens, New York, was, according to newspaper reports, "attacked three separate times within a span of 35 minutes, by a man with a knife" and died en route to the hospital. The New York Times sensationalized the crime two weeks later when an article disclosed that "37 witnesses to a murder in Queens failed to report the crime to the police." According to that article, a number of "experts in human behavior" such as "psychiatrists, psychologists, and sociologists" were "as hard put as anyone else to explain the

inaction of the witnesses." One psychologist featured in the article claimed that the problem of apathy and indifference were "the effect of the megalopolis in which we live" while a sociologist at New York State University said that the incident "goes to the heart of whether this is a community or a jungle." Finally, a psychiatrist from the New York Mental Health Clinic attributed the behavior of the witnesses to a pervasive feeling of injustice saying, "It's the air of all New York, the air of injustice, the feeling that you might get hurt if you act and that, whatever you do, you will be the one to suffer." These expressions captured an experience of urban life increasingly marked by a fear of victimization and a pessimistic fatalism about crime and justice.

In continuing his predecessors' rhetoric, President Johnson's formulation of crime and its long-term federal approach to crime control became increasingly out of touch with the growing fear of crime in the nation's cities and the sentiment that something needed to be done about crime *now*. For instance, three days after Kitty Genovese's murder, Johnson issued a special message to Congress proposing a nationwide War on the Sources of Poverty and included crime reduction in his list of subsequent long-term benefits from attacking poverty. However the atmosphere of urban crime fear quickly influenced the way that Johnson talked about crime. By October of 1964, Johnson would equate the War on Poverty with the War on Crime, saying "The war on poverty, which I started today […] *is* a war against crime and a war against disorder." Although Johnson continued to explain crime as a consequence of conditions within the city, his statements about crime began to often contain two other elements that would lead to a new formulation about crime as a problem for governance. He began to regard crime and crime fear as distinct problems for governance, and he explicitly provided a rationale to suspend the "old" formulation of crime in favor of immediate action, ideas that were more fully developed in the second half of Johnson's Presidency. In his January 1965 State of the Union Address he

specifically identified the fear of crime as a target for federal action saying, “Every citizen has the right to feel secure in his home and on the streets of his community,” and adding, “I will soon assemble a panel of outstanding experts of this Nation to search out answers to the national problem of crime and delinquency.”

The War on Crime 1965 – 1968: Lyndon Baines Johnson

On July 26, 1965 President Johnson issued a statement on establishing The President's Commission on Law Enforcement and Administration of Justice. He began with the words “I HOPE that 1965 will be regarded as the year when this country began in earnest a thorough, intelligent, and effective war against crime.” Johnson charged the commission with the systematic study of the following three fundamental problems: “What are the basic causes of crime and delinquency? How can we increase respect for law and order? What are the optimum methods for preventing crime?” These questions reveal the massive scope of the Commission’s project and Johnson’s intention for the work of the commission to provide the basis for a radical change in the Federal Government’s involvement in local crime control efforts. During the two years between the commission’s inception and its final report, “The Challenge of Crime in a Free Society,” Johnson developed the *fear* of crime as a major challenge for governance distinct from criminal incidents themselves. I show through Johnson’s statements about fear and governance that the widespread fear. In turn this had an impact on the weight that President Johnson, newspapers, and the Commission that gave to the common citizen’s knowledge and experience of crime fear in the nation’s urban centers and life on the streets. Ultimately the distinction between criminal events and crime fear formed the basis for a new formulation of crime as a problem for governance rooted in the *average citizen*’s experience of crime fear.

In the mid 1960's a marked shift occurred in the types of crimes used to exemplify the "crime problem" in Presidential statements. Whereas the majority of statements from the early 1960s use "crime" to refer to crimes established within federal jurisdiction or else explicitly refer to special issues such as juvenile delinquency, statements from 1965 onwards tended to exemplify the problem of crime through "crime in the streets." Johnson first used the phrase "crime in the streets" before declaring the war on crime in a public statement came in a March 1965 special message to Congress, where he began his comments on *federal* law enforcement by saying "The average citizen is most directly concerned with what is called 'crime in the streets.' Crime of this kind -- robberies, muggings, housebreakings -- are the primary law enforcement responsibility of state and local governments." The phrase made its way into Johnson's 1966 State of the Union address and from there became a natural feature in his statements about crime. Johnson used "crime in the streets" to indicate a particular category of crimes, but at the same time he also used the term to refer to a category of crimes that were "the primary law enforcement responsibility of state and local governments." Much like the distinction between 'urban' and 'local' problems, the phrase 'crime in the streets' came to denote a discrete set of crimes that take place in contained local spaces while at the same time connoting a crime problem marked by its continuity across these specific locales. In the context of his 1965 message to Congress, the phrase implicitly creates a distinction between the average citizen's fear of crime and individual criminal events. The role of "crime in the streets" in Johnson's rhetoric was often to explicitly draw federal attention to a different type of crime than the body of crimes falling under federal jurisdiction. This was an important step in fully justifying increased federal involvement in local law enforcement because it both reinforced the traditional

authority of local law enforcement in certain aspects of crime control while at the same time describing a new type of crime problem – crime fear – outside that authority.

Johnson continued to develop the distinction between crime incidents and crime fear in a March 1966 special message to Congress, saying "Crime--the fact of crime and the fear of crime--marks the life of every American." Johnson used the fact of crime / fear of crime parallelism to establish an analogy to the tangible and intangible costs of crime: on one hand characterizing the "fact of crime" through statistical measures and tangible costs in lives and dollars, while on the other hand characterizing the "fear of crime" through the intangible costs of insecurity in the home, neighborhood, and community. The distinction between the fact of crime and the fear of crime compromised the "traditional" expertise of local law enforcement agencies in issues related to crime by introducing the *average citizen*'s (and potential victim's) experience of crime fear into the epistemology of crime. The first National Crime Victimization Survey (also a product of the 1965 crime commission) was not completed until 1973, leaving almost a decade in which the immeasurable "true" crime rates could only be spoken for by frightened city-dwellers. This alternative way of knowing the 'reality' of crime served as a foundation for federal action specifically targeting crime fear.

The final premise for federal intervention against "crime in the streets" came in the form of a federally guaranteed "right to security." In his 1965 State of the Union Address Johnson premised that "Every citizen has the right to feel secure in his home and on the streets of his community" immediately before foreshadowing the upcoming Crime Commission. He repeated the premise in his 1966 address, then saying "Our people have a right to feel secure in their homes and on their streets--and that right just must be secured" again in the context of enhancing local crime control agencies. Finally, in his 1965 State of the Union address Johnson also stated

the premise that "The safety and security of its citizens is the first duty of government." The *right to protection* has a long history stretching into English common law beyond the scope of this paper. Here it is sufficient to know that Johnson framed this as a positive right, therefore at the same time claiming a right in the name of the people and claiming authority for the federal government. The positive guarantee of a *right to feel secure* completed the synthesis of a new formulation of crime as a problem for governance. This formulation ultimately boiled down to two premises: that the fear of crime is distinct from criminal events, and that the federal government must ensure that its citizens feel secure in their homes and communities.

The emphasis on the *fear* of crime was particularly significant for President Johnson beyond the simple fact that crime was a major concern for an increasing number of Americans. For Johnson widespread fear represented a *state of emergency* for governance, a condition in which the purpose and principles of governance could not be maintained. Even before he formulated crime fear as a distinct problem for governance, Johnson made the rejection of a fear society a central message of his presidency. In August of 1964 at the Democratic Party national nominating convention Johnson framed his Presidency in direct opposition to the preceding decade of McCarthyism saying, "The era of fear and suspicion brought on by accusations, true and false, of subversive activities and security risks has passed." In statements made around the country approaching the election of 1964 Johnson consistently made the point that it is in "the atmosphere of hate and fear and suspicion in which individual liberty faces its maximum danger." President Johnson did not believe that his goal of founding a Great Society for the United States could be achieved while there was a widespread fear of crime. A year after launching the war on crime Johnson would say, "We are trying to build for greatness in America.

But it is pretty difficult with a society which lives in fear of robbers and murderers and racketeers to be great or even respectable."

This *exceptional* state surrounding crime fear as a problem for governance created an empty space wherein the established supremacy of law enforcement as people who *know* the *facts* of crime was effectively nullified, or at least closely confined to matters directly related to policing. This empty space for the governance of crime fear drew on a new source of knowledge about crime, the experienced fear of a (*potential*) victim of crime, and a federal claim to authority made by President Johnson as a rights claim to security in the name of a fearful public. The crime commission (and other similar concurrent federal and state commissions) served as a mechanism of knowledge production by which the subjective experience of crime fear and victimization could be translated into the objective rhetoric of science and law.

The Challenge of Crime: 1965-1968

The recommendation leading to the birth of the 9-1-1 emergency response system came from the Science and Technology Task Force of President Johnson's 1965 crime commission. The commission did the majority of its work in 1966 and issued its final report, "The Challenge of Crime in a Free Society," in February of 1967. However the basis for much of this section is the final report of the Science and Technology Task Force published by the Institute for Defense Analysis later that year. This section examines the task force's recommendation for a universal number, and I pay particularly close attention to the way that the task force members framed its recommendations through the problem of *street* crime.

The crime commission's first step was to conduct a broad assessment of the nation's crime problem. Based on their preliminary results the commission appointed several task forces to carry out intensive investigations into several major facets of crime and law enforcement. The

commission first focused on established justice institutions, with initial task forces designated to study the police, the courts, and corrections, with a separate task force devoted to continuing the assessment of the crime problem. Eventually the commission added other task forces to examine issues related to specific types of crimes: organized crime, juvenile delinquency, narcotics, and drunkenness. Finally, in 1966, the commission formed a collaborative task force to focus on issues related to science and technology.

The Science and Technology Task Force was distinct from the other task forces in its composition, leadership, and the scope of its examination. The Department of Justice's Office of Law Enforcement Assistance funded the task force, and it was run by the Institute for Defense Analyses, making it the only task force organized outside the Commission. It was also the only task force whose staff – mostly engineers and scientists – lacked insider knowledge of criminal justice operations. The task force based its report on a systems analysis approach, examining to the component parts of the criminal justice system beginning with the crime itself. In their model each part – police, courts, corrections, etc. – performed sequential tasks – apprehension, investigation, prosecution, etc. – whose outcome could be assessed by some measure. The task force regarded calls to the police as the principal link between crime and the police, the first step in the apprehension process. Significantly, their systems model located emergency calls *outside* of the police command-and-control system, and Task Force members presented the merits of their recommendations from the point of view of an emergency caller.

The task force's recommendations concerning "Communications to the Police" not only imagine the needs of citizenry as framed by the problem of crime; they imagine those needs as framed by a particular type of crime – street crimes. The task force introduces this section with the claims, "the most frequent initiator of the apprehension process is a call from a citizen,

usually a victim of a crime or a witness to one. In the case of street crimes, however, it is often difficult for the victim or a witness to call the police promptly." The first of their two recommendations was for the conversion of public telephones and police callboxes for free public use when dialing an emergency number. In order to frame this recommendation the task force begins by noting that "The victim of a robber careful enough to steal his last dime cannot now use the public telephone." Police callboxes were common in major cities but unlike public telephones they were usually not available for public use. The commission noted that during World War II these callboxes had been made available to the public and painted red-white-and blue, and they outlined a similar strategy for their use the war on crime, emphasizing the need for call-boxes to be clearly marked, well lit, and highly publicized. The task force's second recommendation on communications to the police was responsible for beginning the modern 9-1-1 system:

> When trying to call the police from an ordinary telephone, a person is faced with a bewildering array of police jurisdictions and associated telephone numbers. In the Los Angeles area alone there are 50 different telephone numbers that reach police departments within Los Angeles Country. It should be possible to use a single telephone number to reach the appropriate police department (or some other emergency center). Great Britain has such a universal emergency number, "999."
>
> Wherever practical a single number should be established, at least within a metropolitan area and preferably over the entire United States

Although it is a remarkably simple idea that in an emergency situation a short and memorable combination of numbers will summon immediate help the officials who received this recommendation, like proponents of the "H-E-L-P" initiative, discovered that the devil was in the details of arranging a system to distribute those calls. The universal number recommendation is markedly ambiguous about implementation compared to other recommendations made by the science and technology task force. It is not clear if members recommend a universal number for all emergencies or simply for police emergencies, and does not rule out separate universal

numbers for police, fire, and ambulance emergencies. In the end the task force consisting of law enforcement outsiders left these ambiguities for politicians and public officials to resolve.

Better Known Than '007'

This section reviews the early implementation of 9-1-1 with a focus on how the jurisdictional claims that defeated "H-E-L-P" in California were silenced through imagined scenarios of crime victimization. This section is based primarily on personal communications between members of the FCC and staff at the White House. The ambiguity of the commission's universal number recommendation left federal officials with many choices when deciding on the most appropriate method of implementing their recommendation. For several months the recommendation bounced around between the White House, the Commission, the FCC, and AT&T in an attempt to determine the best method and appropriate jurisdiction for implementing a nationwide emergency number. On November 8th, 1967, Congress adopted House Concurrent Resolution 361 to "express the sense of Congress that the United States should have one uniform nationwide fire reporting telephone number and one uniform nationwide police reporting telephone number." A house concurrent resolution has no binding force of law; it is merely a formal statement of Congressional opinion. Congress clearly favored a unique number for different types of emergencies, but the FCC was quick to point out that such a system would require a centralized dispatch center to handle these calls.

Although the Crime Commission was the major impetus behind an emergency number; its work took place alongside a number of other commissions addressing civil unrest and civil defense. The National Advisory Commission on Civil Disorders contacted the Crime Commission several weeks before HCR 361 to assess the possibility of improve the usefulness of a telephone for assistance in managing civil disorders (Loevinger 1967). The matter passed to

FCC Commissioner Lee Loevinger, supervisor of the Emergency Communications Division, who in turn discussed it with leadership at AT&T. On January 12, 1968, AT&T announced a plan "to establish a national emergency telephone number – 911 – with which police, fire and ambulance services could be summoned from any phone in the United States." On the same day Loevinger predicted that the new emergency number would eventually become "better known than 007." Mayor Lindsay of New York hailed the plan and hoped that "New York will be the first beneficiary of the three digit system." The announcement drew immediate praise from the general public, but much like "H-E-L-P" it also drew criticism from emergency service officials and now the 2050 independent telephone companies apart from AT&T, who had not been told about the new system (Burnham 1968). AT&T, it turns out, also hadn't consulted the White House or any emergency service officials before announcing their plan.

The lack of communication between the FCC and the White House was clear in Johnson's February 7th Special Message to the Congress on Crime and Law Enforcement: "To Insure the Public Safety," where Johnson instructs the Attorney General "to cooperate with the Federal Communications Commission, local law enforcement authorities, and the telephone companies to develop methods to make the ordinary telephone more effective for summoning police aid in times of emergency." AT&T's premature announcements placed the White House in the awkward position of having to make a decision whose outcome had already been announced to the public. It also disadvantaged AT&Ts smaller competitors, who had no preparation or plan to implement any such system. Commissioner Loevinger used the public support following AT&T's announcement to his advantage in supporting the 9-1-1 number against the complaints from police officials in response to AT&T's announcements. In late February penned a memo to Joseph Califano, a Special Assistant to the President, responding to

these criticisms of the new 911 system. Of those criticisms "the most difficult problem undoubtedly," Loevinger wrote, "is that of reconciling jurisdictional differences between and among the emergency agencies." Loevinger rejected this criticism on the grounds that "the jurisdictional objection is based upon the viewpoint of the emergency agencies and not of the public," adding "from the viewpoint of the individual in distress there simply cannot be the slightest question as to both his convenience and dire need." To make his point Loevinger provided a list of 13 hypothetical emergency situations (see Appendix). Seven of his imagined emergency situations referred specifically to street crime emergencies.

Discussion – From "H-E-L-P" to 9-1-1 in Three Years

This chapter argues that the modern 9-1-1 system was made possible by the transformation of crime from a *social problem* to an *emergency of governance* in the mid-1960s, and that in turn crime became *the* emergency around which the 9-1-1 system was imagined and organized. This account has been organized around that claim, beginning with the defeat of "H-E-L-P" by California in 1965. The Governor's veto of "H-E-L-P" in 1965 was a direct consequence of criticism from police and fire officials in the Los Angeles metropolitan area who claimed that emergency calls for help were the province of local authorities through the principle of home rule. These criticisms carried weight with Governor Brown because local officials held a privileged position within the established order for governing crime. Yet three years later these same criticisms were given considerably less weight. Why? In the intervening years between "H-E-L-P" and 911, President Johnson launched the war on crime based on a new formulation of crime as a problem for governance.

The war on crime itself coincided with a new formulation of crime as a problem for governance at the federal level. Presidents Eisenhower, Kennedy and Johnson up until late 1964

acted on the premise that crime was just one consequence of deteriorating urban conditions, and the subsequent federal response was a strategy of crime control through programs targeting these underlying urban conditions. This method was an admittedly long-term solution that would eventually be suspended indefinitely in favor of more immediate action. Both the "new" and the "immediate" quality of this formulation were explicitly and often re-iterated in Presidential statements and newspaper stories about the crime. Through the mid-1960s the fear of crime grew rapidly in the nation's urban centers, and the new formulation of crime as a problem for governance emerged highlighting *crime fear*, a consequence rather than cause of crime, as the salient aspect of the crime problem in need of governance. Johnson regarded the widespread fear of crime as more than just another social problem but as an *emergency* situation, one in which the principles of American governance could not be maintained. Johnson named the right to security as the *first duty of government* and then claimed federal authority to act against *crime fear*.

A state of exception is more than just the suspension of juridical order, but a suspension of juridical order *in the name of preserving juridical order*. It was critical for Johnson not to compromise the established delegation of powers to state and local authorities. Johnson's statements after declaring the war on crime are filled with explicit reminders that this order must not, and more importantly *is* not, being compromised. At the same time these reminders also served to limit the authority of local crime control institutions to precisely *local* concerns, while claiming federal authority over *urban* problems. The erasure of knowledge about crime that Johnson affected in conjunction with his war on crime allowed anxiety over the threat of victimization to become a valid way of filling that knowledge gap, a way of knowing the *truth* about crime. The crime commission assimilated this knowledge and transformed it into the

language of science and governance, providing the federal government with a means of producing knowledge about crime fear and giving them both the knowledge and the power to act in the name of reducing crime fear.

Finally this anxiety about crime victimization is evidenced by the contrast between the types of crimes and the types of emergencies used to frame the need for "H-E-L-P" and those used to frame the need for 9-1-1. Articles supporting "H-E-L-P" placed a heavy emphasis on ambulance and fire emergencies, while support for 9-1-1 was articulated mainly through imagined situations of crime victimization. Articles supporting "H-E-L-P" also often focused on the significance of emergency calls to the institutions that received them, while support for 9-1-1 focused on the significance of emergency calls to the caller, placing the needs of an emergency caller in direct opposition to the jurisdictional demands of emergency service officials. Consequently street crime became the emergency around which 9-1-1 was modeled as a two-fold shift occurred with street crimes becoming the exemplar of "crime" and crime becoming the exemplar of "emergency."

9-1-1 was hailed in 1968 as an innovation in technology made recently possible through advances in telephone and communication technology. Yet, as the commission itself frequently pointed out, such a system had previously existed in Great Britain, and other countries, for over a decade in some cases. Certainly after conducting their feasibility study of a unified emergency number, service officials in the Los Angeles area determined in 1963 that such a system was both technologically and financially *feasible*. The federal government could also *easily* have found a rationale for a nationwide emergency number in the name of protecting interstate travelers who, when visiting or passing through any number of jurisdictions, would be unlikely to know who to contact and how to contact for emergency services. The critical component in

the history of the 9-1-1 system is that it became *politically feasible* through the problems of crime and crime fear. It is precisely in this way that emergency was "governed through crime."

Conclusion – Emergency Response in an Era of Mass Communication

Today the 9-1-1 emergency response system has achieved the level of cultural penetration that Lee Loevinger predicted in his memo to the White House, becoming a "part of the language and common knowledge," virtually synonymous with "emergency" itself. Witnesses, participants, and attendants to emergency situations of all kinds frequently mark emergency situations with yells or shouts of "call 9-1-1!" Calls to 9-1-1 are featured in the news to reify norms and expectations, and in the same news broadcast they can be used to represent the horror of victimization, to convey humor at a bumbling moron who calls 9-1-1 for the *wrong* reasons, to glorify young children as heroes when they save a family member by calling the police. The organization of the emergency response system both shapes and is shaped by more than just emergency telephone calls.

The past decade has seen a vast proliferation in communication systems and technologies, and as the 9-1-1 system straddles the boundaries between individuals, state authorities, and private corporations it is also shaped by all of these forces. The *penetration* of communication technology has increased as people carry 'telephones' that are more like personal computers and can be instantly updated with information, vastly increasing the rate of information exchange between individuals without a need for an intermediary media or state organization. These devices also allow callers to contact authorities from increasingly dire emergency situations, effectively decreasing the distance between emergency and institution. The *type of information* that can be sent and received remotely now includes video as well as audio information. Dispatches can use security cameras at stoplights and other public locations to

enhance their reconnaissance of a reported emergency before and during an emergency call and direct officers on the scene to suspicious persons or objects as the situation evolves. Will the organization of the 9-1-1 system continue to see new information put to use for *policing* before improving other emergency response functions? The *private market* for security has also evolved with communication technology. Vehicles now come with automated features that detect collisions and notify the authorities through services like On-Star, with advertisements centering on the communication between a victim of an accident or theft, On-Star service providers, and a 9-1-1 dispatcher. Just as "crime" and "emergency" merged in the creation of the 9-1-1 system, so too have "connectedness" and "security."

The following chapters continue to examine the link between crime and emergency embedded in the creation of the 9-1-1 system that we demonstrated here. Between 1969 and today, the 9-1-1 system has become thoroughly entrenched in daily life, and "dialing 9-1-1" is virtually synonymous with "calling the police." In effect, all emergency is placed first under the gaze of law enforcement before any other institution. Certainly there is something significant in the way that this arrangement has marginalized certain populations, from criminal populations to the exploited, who need assistance but cannot place themselves under the scrutiny of law enforcement. Hotlines and volunteer programs assist those people who cannot get the resources they need through 9-1-1 as the emergency response system crystallizes values about social and individual responsibilities. 9-1-1 is as much as reflection of social order as it helps to reinforce social order, and that line of thought deserves to be carried forward. However this project follows a different course. Just as 9-1-1 was painted falsely as a "wonder" of technological progress, technological advances in emergency response also continue to be painted in the colors of scientific progress and advancement. The following chapters examine the implementation of

new technologies, particularly visual technologies, in modern dispatch practices. Chapter 2 focuses on providing a rich description of the dispatch center in place of the outdated model that imagines dispatchers like switchboard operators working in isolation. Chapter 3 focuses specifically on visual information and their function in dispatch practices. Through these chapters the theme of this chapter continues to be developed: what imagined scenarios motivate the *obvious* need for these technologies, and under what scenarios are these technologies deployed?

Chapter 2 – The Dispatch Center of the Early 21st Century

Introduction – Dispatch "Then" and "Now"

The 9-1-1 emergency response system has long been portrayed through the individual emergency telephone call. From media clips of released 9-1-1 calls to scholarly articles, the presentation of the emergency response system at work begins with the transformation of an emergency call into a transcript. Meanwhile the proliferation of information and communication technologies in the past decade has rendered spoken language into only one of many forms of communication available on a typical "telephone." Telephones increasingly function as personal information hubs that enable the instant sharing of text, photograph, and video media. Meanwhile the communications infrastructure of 9-1-1 emergency call centers, or public-safety answering points (PSAPs), has remained largely unchanged since the creation of 9-1-1 in 1968. Recently, however, the FCC has made a concerted effort to align the system with everyday technological capacities.

In August 2011 the FCC mandated the adoption of Next Generation 9-1-1 (NG911) upgrades to all 9-1-1 public-safety answering points by the end of the decade in an effort to align the 9-1-1 system with new technologies and the daily routines associated with their use. Among the listed goals for the NG911 system were to "develop automatic location accuracy mechanisms" and "enable consumers to send text, photos, and videos to PSAPs." These goals hint at a growing capacity for dispatchers to engage with their callers and their communities through forms of communication other than spoken language. While a wealth of research has approached emergency calls from a linguistic perspective, it is clear that evolving dimensions of dispatch work cannot be captured through the analysis of conversation alone.

This chapter sets out to incorporate the dispatch environment into the examination of dispatch practices. Based on observations conducted at five dispatch centers, this chapter charts the dispatch environment and sets dispatch practices within it. Attention is focused on dimensions of dispatch work that have been absent in previous research: the cooperation of multiple dispatchers working on the same call, the economy of space within dispatch center, and the organization of dispatch information systems. These dimensions are not only necessary to accurately describe dispatch work, but also have a potentially powerful bearing on the conduct and outcome of routine dispatch practices.

Approaching Dispatch as an Information Environment

To advance the study of emergency response and move away from a focus on individual calls, we approach emergency response centers as *information environments*. The term "information environment" has appeared in academic literature for over two decades, but it is often applied as a label without being given a formal definition. The Department of Defense, however, has defined an information environment as "The aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information" (DOD, 2010). For our purposes this definition effectively highlights three dimensions of the dispatch environment that we have set out to map: (1) a physical space with (2) a network of actors using (3) information systems to collect, process, and act on incoming information.

A principal task for dispatchers is to classify incoming calls for institutional response or non-response, yet little inquiry into emergency has focused on the creation or application of emergency classification schemes. In *Sorting Things Out*, Bowker and Starr explore the production of categories and standards that come to seem natural or invisible in daily life. Bowker and Starr draw from the sociology of knowledge & technology, history, and information

science to demonstrate that these invisible classification systems reify and constitute particular moral and social orders. While they do not directly address classification in emergency response, their work calls attention to the significance of classification systems in emergency response. It also motivates inquiry into the link between the designation of an "emergency" and the mobilization or denial of institutional resources and action.

Edwin Hutchins' *Cognition in the Wild* presents a case study of cognitive tasks accomplished by social networks. Based on his work as a naval psychologist, Hutchins examines in depth how cognitive navigational tasks are accomplished jointly by members of the crew spread across many parts of the ship. An analysis of emergency dispatching practices through 9-1-1 call transcripts captures only a very narrow cross-section of dispatch work. The dispatch-as-dialogue model creates the illusion that the dispatchers work in relative autonomy from other dispatchers. However, multiple dispatchers with different roles are often engaged in work on the same call, and they sometimes switch roles rapidly during the course of their work. Mapping the dispatch center as an information environment requires an understanding of dispatch as a coordinated effort and must account for how information is moved and utilized by these actors as a call unfolds.

Cognition in the Wild provides a framework for viewing emergency response as a task accomplished by a team for identifying features in the dispatch information environment that impact the dispatch team's work. Using Hutchins' work as a model we examine how multiple actors contribute to emergency response during a call, with a focus on the communication of information between dispatch team members during emergency response. Hutchins also compellingly demonstrates that a distributed cognitive system has emergent properties independent from those of the individual actors within the system. His work motivates inquiry

into how characteristics of a dispatch information environment can impact the ability for the network to make decisions or recognize and correct mistakes.

The Dispatch Environment

Prior work has largely ignored the dispatch environment in its analysis of emergency calls. This section examines the physical and social dimensions that constitute the dispatch information environment. Each dispatch center in this study is at once very similar to the other center, yet unique in ways that impacted dispatchers' work. Comparisons amongst sites suggest that the dispatch environment is consistently organized at three levels: the dispatch desk, the dispatch team, and the dispatch center itself. Each of these levels is both a physical and a social context for dispatch, and in each center dispatch tasks and routines were accomplished thorough dynamic interactions across these three levels. For a lay person with no experience in a 9-1-1 call center, this section is meant to familiarize the reader with the dispatch environment. For dispatch workers, this section represents a heuristic starting point for transforming the dispatch center from an everyday work place into a mutable environment defined by a set of physical parameters. This section also foreshadows the remainder of this chapter by drawing attention to prominent features in the dispatch environment.

The Dispatch Desk

The dispatch desk is the center of a dispatcher's work, the site where most of their tasks are accomplished, and the logical starting point for mapping the dispatch information environment. Seated at their desk, the dispatcher's field of view is dominated by a series of computer monitors. At four sites the layout and orientation of these monitors was nearly identical with 5 or 6 monitors placed horizontally in front of the dispatcher. In East City the confined space required dispatchers to use a 2 by 2 grid of monitors. These monitors display the

information and tools necessary for a dispatcher to process information and monitor the status of units as they respond to calls. Dispatchers often wear a headset, giving them free use of their hands to operate the interfaces in front of them through a collection of computer mice and a keyboard.

The dispatcher's intake of information begins as soon as a call comes in to the dispatch desk. Simultaneous visual and audio cues signal an incoming call, and information related to the call is automatically displayed on the screens in front of them. One monitor displays the calling number and any geographic information associated with it, or ANI/ALI information, which stand for automatic number identification and automatic location information respectively. Depending on the type of telephone used in the call, the ANI/ALI information may be missing or truncated. Land lines typically provide complete ANI/ALI information, cell phones offer a geographic fix with varying accuracy, and prepaid phones provide no information. This information can be inaccurate, but it usually allows dispatchers to immediately identify calls outside of their jurisdiction and the kind of device that the caller is using.

Every desk also has one monitor dedicated to telephone software to manage incoming and outgoing calls that displays a digital image of standard dialing pad, shortcuts for commonly dialed numbers, and a list of incoming lines that indicates incoming or active calls. Although known as 9-1-1 emergency dispatch centers, many PSAPs also receive incoming calls on other lines associated with their departments. Big City was an exception to this rule as the massive volume of incoming emergency calls requires dedicated call takers at every hour of the day. Other centers also handled calls including incoming calls to the department's emergency and non-emergency seven-digit numbers, calls to administrative lines connecting to other departments, and intra-departmental communications. Dispatchers frequently make outgoing

calls, often transfer callers to appropriate services such as fire and paramedics, and frequently need to contact other private or public services such as towing companies or hospitals. Although depicted primarily as call-takers, outgoing communication is frequently a part of dispatch work and many calls they receive are not from callers who dialed "9-1-1."

A third screen is dedicated to computer aided dispatch software or CAD for short. The CAD contains tools for performing many core dispatch tasks and is undoubtedly the "heart" of activity at the dispatch desk. A complete description of CAD functions would take several pages, so only the most common functions are discussed here. The CAD simultaneously facilitates the collection and distribution of information for incoming calls and manages the status of active department units as they respond to incidents. As the dispatcher collects information from a caller, that information is entered into the CAD and can be used to create an official incident report (IR). As a call progresses and more information is learned, the IR can be updated with notes to reflect the new information. Other dispatchers can view information for these incidents through their CAD, and officers' vehicles are equipped to view an abbreviated version of the dispatch CAD for incident and unit information. The CAD also displays a list of active units so that a dispatcher can keep track of which units are responding to ongoing incidents, the unit's current location, any action the unit might be engaged in, and time spent at that location.

Finally, each dispatch desk has a screen displaying software to manage communications on many emergency radio frequencies. Radio is the primary means by which dispatchers communicate with their units responding to an incident, but radio also serves to connect the dispatch center with other community resources. Therefore, departments utilize multiple frequencies for different functions. For example, a particularly large operation may be carried out on its own frequency to minimize voice traffic on the main emergency frequency.

Departments also operate within larger county emergency response entities, so county-wide frequencies are sometimes used for communications to multiple agencies. It is not uncommon for a dispatcher to receive and send information on several frequencies during a single incident. Radio communications are highly structured by communications protocols. South County has a centralized emergency authority that establishes radio protocols for all departments using emergency frequencies, while North County lacks such an authority. Variation in local codes and culture contribute to differences in radio communication etiquette between sites.

These are the core elements of a dispatch desk and provide the utilities necessary for a dispatcher to perform vital functions in their daily work. The majority of existing 9-1-1 research is situated completely at the dispatcher's desk. Responding to a single call, however, often involves several dispatchers working together through and with the utilities at their desks. The following section describes the network of communication in the dispatch center that dispatchers occupy when responding to emergencies.

The Dispatch Team

Depiction of 9-1-1 calls through transcripts and official recordings creates the illusion that dispatchers' work is individual in nature. Sitting along with dispatchers, it became immediately clear that they do not work in a social vacuum. A vehicle description, address, name, or other information is often repeated several times by other dispatchers as information moves between these actors, from the caller to responding units. As a dispatcher obtains and confirms information from a caller, that information often travels between dispatchers, each of whom might use it for their own tasks. Research based on transcripts completely overlooks this social milieu. Rather than working in isolation, dispatchers work within a network of actors

inside and out of the dispatch center. This section describes the dispatch team and introduces the roles and the tasks that dispatchers occupy when responding to emergencies.

The size and organization of dispatch teams varied at each site and was shaped by manpower and call volume. In East City, the smallest city, a full shift operates in the day and consists of two dispatchers, while the night shift consists of one active dispatcher. Campus dispatch operates with one or two dispatchers, and often the dispatch supervisor occupies the third station. West City operates with 3 dispatchers and Mid City with between 3 and 5 dispatchers. Big City has dozens of dispatchers active at all times.

Dispatchers divide their tasks into three categories: primary, secondary, and radio tasks. Primary tasks are the core tasks associated with receiving emergency response calls, for example answering incoming calls, obtaining information, creating incident reports, and managing communication with a caller. Radio tasks are tasks associated with managing outbound and inbound radio traffic and include providing incident information to responding units, updating unit status as it is provided or requesting updates from units that have not checked in recently. Secondary tasks are those that assist or facilitate a primary dispatcher responding to an incoming call, such as contacting a tow truck service, locating paperwork necessary for a call, or taking incoming calls during a busy period.

Generally, dispatchers fill primary, secondary, and radio roles corresponding to these tasks. The rigidity of these roles fluctuates with manpower and level of specialization and size of each center. Due to the high population-to-dispatcher ratio in Big City, dispatchers are assigned to one of several possible specialized roles each day: receiving urgent 9-1-1 emergency calls, handling less urgent calls transferred from 9-1-1 or “9-1-2” calls, radio operations, or backup West and Mid City dispatchers are assigned to primary, secondary, and radio roles but may shift

roles as situations require. Campus and East City operate with two or sometimes one active dispatcher. Nominally one dispatcher occupies a primary position and another will cover backup and radio duties, but these categories are quickly discarded as soon as two calls come in at once.

The Dispatch Center

The dispatch desk and team are situated within the dispatch center, a physical space that has been largely ignored in previous work. Each dispatch center visited had a distinct atmosphere, a flow of activity shaped by both the material arrangement of the room and the activities of its occupants. More than a warehouse of equipment and dispatchers, the organization of the dispatch room proved to have a marked impact on how dispatchers and different locations approached and accomplished their tasks. Below several dimensions of the dispatch office are introduced, each with a demonstrable impact on dispatch practices.

The most apparent quality in each center was the allocation of space to different resources within the dispatch environment, or the economy of the space. More than the size of the center or presence of certain resources, the economy of space had a powerful impact on the way that dispatchers operated within and engaged with their environment. The economy of space is both a function of the dispatch room's size and the resources available. For example, the presence of identical televisions in different dispatch centers can provide a varying amount of utility based on the size of the dispatch center. Dispatchers at East City have a small television usually tuned to local news. Since the city is situated on the county line, local television and news often provides the most rapid notification of incidents in the neighboring county. In contrast, the dispatch center at Big City has a similarly sized television located at least 20 feet above the watch commander's bridge. Much of the room is too distant to clearly make out

images or read the screen, and at no point during observations did a dispatcher monitor or reference its presence.

The arrangement of the space also played a large role in how dispatchers accomplish certain tasks while engaged in emergency response services. The relative location of dispatchers and resources can make certain tasks easy while rendering others difficult. An active dispatcher can rarely take their attention from the displays in front of them. Although centers may have a similar economy of space, a slight shift in the arrangement of resources can determine when and how those resources are incorporated into dispatch practices.

Finally the location of the center within the police departments had a considerable impact on the engagement of dispatchers with their departments. In some departments the dispatch center was centrally located. These centers were often sites of heavy traffic, where dispatchers, officers, and other staff frequently interacted for personal and professional reasons. In other departments the dispatch departments were distant, isolated in their own buildings or a corner of the department where interactions with officers and staff were rare.

Communication Between Dispatchers

Rather than engaging only in 1-on-1 conversations with callers, dispatchers often work together during the course of a call. Responding to an incident is frequently a coordinated effort that involves multiple members of the dispatch team working jointly to accomplish a set of tasks necessary for the emergency at hand. The dispatch desk, team, and center constitute the physical and social setting where this effort takes place. Above we gained a metaphorical map of the physical and social terrain that information traverse as it moves through a dispatch center. Here this map is applied to chart how dispatchers communicate with one another during emergency response.

The most basic method that dispatchers employ to communicate information between each other is through direct verbal communication. This form of communication can be troublesome when a dispatcher is engaged in speaking to a caller or to units through the radio. Nonetheless, dispatchers often effectively communicate directly to one another during a call. Most dispatch headsets are equipped with a mute button, allowing the dispatcher to edit what the caller hears at a moment's notice without compromising their ability to hear a caller. Dispatchers will frequently mute themselves for a moment during a call to relay information directly to a dispatcher. Dispatchers may also communicate through direct non-verbal means. The CAD allows all active dispatchers to access an ongoing incident report once it has been generated. Dispatchers who cannot speak to one another directly can update the incident report with information or a message that other dispatchers can quickly view. However, this information can take several seconds to update and may require a dispatcher to manually refresh the incident report.

The official recording of a call represents only a selected portion of the dispatcher's spoken words and a fraction of the information conveyed or received while responding to a call. Frequently a dispatcher will mute their voice while a caller was still talking in order to pass information or respond to a question from another dispatcher. The mute functionality also serves as a safe outlet of frustration for the dispatcher. Often callers are uncooperative with a dispatcher's requests for information or ignore their instructions, for instance providing a narrative instead of the information a dispatcher is requesting. In these cases some dispatchers will mute themselves to vent their frustration. Not only does this help dispatchers retain the calm and poised outward demeanor expected of them, but also serves to notify nearby dispatchers that they have a potentially difficult caller. Dispatchers' spoken words often have such a multiplicity

of purpose that is missed when their words are placed only in the context of the conversation with a caller.

In Mid City, West City, and Campus dispatch, dispatchers frequently communicate through the *intentional overhearing* of each other's conversations. This intentional overhearing is a form of cooperation between the speaking dispatcher and nearby listener(s) in the dispatch center. Dispatchers may make statements during a conversation with a caller intended for both the caller and other dispatchers. For example, when a call requires an immediate response from police units it is not uncommon for primary, secondary, and radio dispatchers to be engaged in some activity related to a call. In such cases it can be critical for responding units to receive information like a suspect or vehicle description as soon as possible. As a caller responds to dispatcher prompts for details such as address, hair color, height, or clothing, the dispatcher often repeats those details. Linguists call these repetitions *echo utterances*. Within the call they often function as confirmation of received information, an opportunity for a caller to correct a misinterpreted statement. However they also serve to transmit the information to other dispatches in the room. Radio dispatchers overhear these echo utterances and can pass along that information instantly to responding units and other involved parties. These echoes are sometimes repeated several times across the room within seconds of the caller's presentation of the information.

Along with echo utterances, *formulations* are also prominent in intentional overhearing scenarios. Linguists studying emergency calls have noted that dispatchers frequently employ formulations during the course of a call, but have only focused on their role within the conversation between the dispatcher and the caller. In the context of discourse analysis Garfinkel and Sacks (1970: 350, 351) define formulations as "some part of the conversation [that is] an

occasion to describe that conversation, to explain it, or characterise it, or explicate, or translate, or summarise, or furnish the gist of it." When a dispatcher offers a formulation of a caller's complaint or report, it functions in the conversation as a summary of what has been reported, a translation of those events into actionable institutional terms, and an opportunity for the caller to challenge or accept that formulation. Through intentional overhearing, formulations also serve as a method of informing other nearby dispatchers of a serious, or sometimes humorous, call. Secondary or radio dispatchers who may be engaged in other tasks are often cued to reorient their attention to an incoming priority call by the overhearing of a formulation that names a serious crime. For example, in one case a dispatch supervisor was discussing planned changes to the dispatch center when a caller reported that his wallet had been taken by a man who had "flashed a gun." The dispatcher's response "you were mugged by a man with a gun" alerted the nearby dispatchers to pause their conversation and focus on the incoming call. In general dispatchers consistently demonstrate a well-practiced ability to monitor surrounding communications, and often shifted their actions and attentions in response to cues from around the dispatch center.

The size of the dispatch environments at Big City and East City each inhibited intentional overhearing in different ways and each generated adaptations to compensate for the loss of that communication medium. In Big City dispatchers are clustered by assignment, with a portion of the room dedicated to each of the assigned roles. Within these irregular clusters, most of the dispatchers are seated farther apart than at smaller centers and organized spatially in no consistent pattern. With calls coming in non-stop, dispatchers have neither the time nor opportunity to engage in listening to other dispatchers, nor are nearby dispatchers in a position to provide backup in the same capacity as other center. At the opposite end of the spectrum, East

City is often staffed by a single dispatcher with the department's jailer providing assistance when needed.

Both environments have adapted, however, to accommodate the lack of intentional overhearing. Communication between dispatchers at Big City takes place through a messaging system connecting every active dispatcher and other emergency service workers. While some of these communications are private and direct between individuals, many of these conversations take the form and function of intentionally overheard conversations in other centers. Social events, frustrations, questions, and noteworthy funny or serious incident reports are shared with all other active dispatchers through this system and many conversations are left open to everyone. Meanwhile at East City the jailer monitors the dispatcher's radio traffic to determine when he is needed in dispatch and will walk to the dispatch room to see if he is needed when radio traffic is heavy. Occasionally the dispatcher will summon him directly through radio when relief is needed but not apparent on radio traffic.

Impact on Institutional Outcomes

Communication between dispatchers is a regular component of emergency response, and that communication can take place across varying social and technological mediums in each center. While dispatchers at all five centers managed to communicate the same kinds of information in different ways, those differences between centers had a notable impact on the ability for dispatchers to recognize mistakes or correct their errors. This section discusses some scenarios that emerged in different centers to illustrate the impact of environmental organization on several dispatch outcomes.

Suspicion and Recognition

The vast majority of emergency 9-1-1 calls are so-called *junk calls*, such as accidental pocket-dials, young children playing on a phone, or malfunctioning fax machines. Many other calls are non-emergency calls that are inappropriate for the 9-1-1 line. Therefore, one of the first tasks a dispatcher accomplishes is to distinguish calls that warrant a response from those that need to be redirected to other resources or removed. This gatekeeping task has often been used to define the work of dispatchers, and much early linguistic studies of emergency calls focused on the gatekeeping aspect of emergency calls.

This gatekeeping task is not always accomplished alone; rather the dispatch team can assist the primary dispatcher in several ways. Despite the self-contained concept of a "9-1-1 call," many incidents involve a large number of calls that span over hours or even days. In one particularly complicated case, an incident beginning during Tuesday observations was still ongoing on another visit on Friday evening and had grown to include a number of jurisdictions and agencies. As dispatchers came on and off duty during these visits, they filled each other in on developments and the status of that case in more detail than the abbreviated incident report notes could provide. This practice helps the incoming dispatcher recognize incoming callers related to an ongoing event, prioritize those calls amongst the other calls that they receive, and can even provide information useful in responding to those calls.

Supporting dispatchers in smaller centers also occasionally provide active assistance in gatekeeping functions for incoming calls. At each center except Big City, the ANI/ALI information, call history, and any associated incidents for a dialing number are readily available to each of the dispatchers in the center because each dispatcher may need to serve as the primary dispatcher for that call. When not engaged in another task, dispatchers may provide unsolicited comments to an active dispatcher if they fail to notice an important feature in the array of

incoming information. The clearest example of this occurred at West City dispatch late in the evening, when a caller reported being mugged at knifepoint and gave location before abruptly hanging up the phone. About 10 minutes later, dispatch received another call from across town reporting a gunpoint robbery. As the dispatcher attempted to obtain suspect descriptions and other routine information, the secondary dispatcher exclaimed that the calling number was the same number that had just reporting the mugging across town. Instantly the disposition of the dispatchers changed from concern to suspicion over the caller's ulterior motives. Similarly, a call is occasionally routed to an incorrect dispatch center, and during observations calls sometimes came in from as far away as 60 miles outside the receiving jurisdiction or more often from just outside it. In some cases the urgency of a call would lead a dispatcher to miss the fact that a caller might be one block outside their jurisdiction. Supporting dispatchers often caught these errors and would quickly prompt the active dispatcher to check their available information and confirm the caller's location directly.

Repairing Mistakes and Confusion

It is not uncommon for a dispatcher to make minor mistakes while responding to calls or conducting work related to an incident outside of a call. Cognitive errors such as transposed letters and numbers, typographical errors, misunderstood statements, and many other small mistakes are common. Some elements of the different dispatch environment had a marked influence on the celerity of corrections when these kinds of mistakes took place.

In terms of size, East City and Big City fall on opposite ends of the spectrum. Yet dispatchers working in both of these centers often face a similar situation when taking calls: they essentially work in isolation. Frequently in East City, only one dispatcher is on duty. In Big City the call volume, arrangement of dispatchers, and specialized assignment of dispatchers means the

primary call taker is the only person who is focused on a typical call and is surrounded by other "primary" dispatchers focused on their calls. Thus despite being in a center full of dispatchers, the dispatcher is isolated in receiving and processing incoming information. In other centers it is common for multiple dispatchers to be focused on the same ongoing call.

One particular incident exemplifies both the dynamics of communication and capacity to repair mistakes when multiple dispatchers are focused a call. A caller from a business in West City called 9-1-1 to report an angry customer who had just destroyed some property, made threats, and left on foot. Typically the primary dispatcher controls the suspect description sequence through a series of simple questions, but this caller launched into a description without a prompt. As the dispatcher simultaneously repeated the description and entered the information into the computer, she reversed the colors of two articles of clothing worn by the suspect. Both the secondary dispatcher and radio dispatcher were focused on the call, and the radio dispatcher repeated the mistake across the radio while the secondary dispatcher spoke up to correct the mistake which both other dispatchers quickly corrected. Within several seconds, the primary dispatcher spoke a mistake, had the mistake repeated by the radio dispatcher, had the mistake corrected by a secondary dispatcher, the primary and radio dispatchers corrected their mistake, and the responding unit confirmed that correction across radio.

Errors at Big City and East City were more difficult for individual dispatchers to recognize and correct. On several occasions at both sites a dispatcher transposed numbers in a telephone or address and did not catch those mistakes until much later in the call. Two of these errors occurred during calls where a caller was reporting a situation with a threat for immediate harm, placing the researcher under unexpected pressure. In one case a dispatcher transposed numbers in an address for a unit responding to a possible home invasion. As soon as possible the

researcher spoke up during a quiet moment and prompted the dispatcher to confirm the address, which she then corrected. In a separate case a dispatcher could not understand the speech of a caller reporting that a man collapsed on the road, and after several repetitions the researcher quietly provided the name of the road being spoken. In both environments the researcher was the only other person focused on the dispatcher's activity. In these cities the researcher was repeatedly asked for assistance or confirmation of incoming information.

Individual Investment in Operations

On many occasions dispatchers became personally invested in an incident or "went the extra mile," taking initiative to provide assistance beyond the duties required of them. In particular the social connections that dispatchers had with non-dispatchers often gave them an opportunity to initiate and provide their own assistance with ongoing department affairs. In these cases dispatchers often made these extra efforts to contribute towards "getting the bad guy" and expressed strong law-and-order sentiments. In other cases dispatchers sometimes provide assistance to callers with requests or reports inappropriate for the 9-1-1 number. These actions were shaped by the culture and atmosphere in each of the dispatch centers.

In centers with centrally located dispatch centers, dispatchers frequently have face-to-face conversations with passing officers and administrators. These conversations keep the dispatchers informed about ongoing incidents and give them a more complete picture of operations throughout the department. It is also more common in these centers for officers to ask dispatchers for assistance with work related to previous incidents. Dispatchers have complete access to a number of law enforcement and government databases, generally used to provide information to officers as they are responding to an incident. Officers who are less proficient with such systems will sometimes stop by the center to ask a dispatcher for help accessing

information from these databases. Subsequently dispatchers with free time may use these resources without an explicit prompt in anticipation of future requests. In one incident a well-known pimp was being sought in connection with an assault. Dispatchers took the initiative to locate and print the suspect's criminal history. Several minutes later their effort became a source of humor when the suspect's lengthy rap sheet was still printing when an officer came by to request it.

Dispatchers sometimes respond to calls that are not appropriate for the emergency service line. At West City an elderly lady called 9-1-1 late at night to report that her hot water heater was broken and leaking. Although the dispatcher made it directly clear that this was not an appropriate call for an emergency line, she still took the time find some possible services when it became clear that the woman had no family or neighbors who could help. In another case at West City, a caller dialed 9-1-1 when she learned that her daughter had been arrested. Although the dispatcher could not provide information about a suspect's formal status, the dispatcher took the time to explain the procedures that would take place after an arrest. In general West City dispatch is relatively isolated within the department, and visitors are rare. Dispatchers here are less engaged with department operations and were much more likely to express sympathy with callers than dispatchers with stronger law-and-order attitudes.

Big City is organized in a distinct manner that makes it at once both near and far from department operations. On one hand dispatchers are even farther isolated from interactions with officers than those at West City. Set apart in in dedicated structure, Big City dispatch operates in a highly structured manner designed to process and clear the maximum number of incoming calls. Interpersonal interactions between dispatchers and officers are extremely rare. On the other hand, the department's watch commander and staff direct police operations from the front of the

dispatch room. Unlike other centers the relationship between dispatchers and administrators is sometimes antagonistic, and dispatchers often expressed a sense of having to look over their shoulder to avoid being "written up."

Compared to other centers, dispatchers at Big City have very little time or opportunity to engage in activities outside of their core duties. Often they do not even know the outcome of an incident, and move on to a new call within seconds of finishing the previous call. During one visit a young and relatively new dispatcher would frequently note the incident number of a call that she was interested in so that she could later check on its resolution. More experienced dispatchers looked down on the practice, however, and voiced their opinion that she would "grow out of it." Nevertheless even the most cynical veterans would occasionally go out of their way to help callers with non-emergency situations.

Conclusion – Social and Environmental Factors in Dispatch

Dispatch practices cannot be examined without incorporating the dispatch center into any examination of those practices. Rather than working in isolation, dispatchers work in a dynamic physical and social environment that shapes and lends meaning to their practices and words. The dispatch environment is an information environment that operates across three distinct levels: the dispatch desk, the dispatch team, and the dispatch center. Even minor differences within and between these levels can have a demonstrable impact on dispatch practices and outcomes. In contrast to previous linguistic examinations of emergency response, this examination highlights that dispatch is a *social* task, situating the dispatcher and dispatch practices within a social space.

Placed in the context of the dispatch center as an information environment, some linguistic features of emergency calls take on a significance and meaning beyond the internal context of the emergency calls. These utterances cannot always be explained entirely by the

content of the emergency call dialogue and often have a multiplicity of purpose. In centers with a proximally clustered dispatch team, echo utterances and formulations serve as a method of communication with other nearby dispatchers without breaking dialogue with the caller. The decision to offer a formulation or repeat the caller's words was often not based on the demands of the conversation, but on the need to rapidly provide information or draw the attention of other dispatchers. Echo utterances of suspect descriptions, address locations, or other important developments in a high priority emergency often also echo around the dispatch center during an urgent call as that information is moved to responding units and confirmed by radio dispatchers.

Closely seated dispatchers also often assist in cognitive tasks associated throughout an emergency call. An incoming call is accompanied by an array of information, and in calls that prompt an urgent response a dispatcher may not *notice* or *recognize* the significance or meaning of routinely displayed information. Similarly dispatchers often make cognitive errors, particularly common errors such as transposing numbers or swapping elements suspect description. Other dispatchers focused on the call have the opportunity to catch these errors and correct them.

The presence of nearby engaged listeners emerged as a powerful factor influencing dispatch practices and institutional outcomes. Dispatchers in Big City and East City, despite being the "largest" and "smallest" centers, work in relative isolation from the perspective of information. These dispatchers are often the only person focused on the incoming calls that they handle. Often at Big City a unit will not be available for routine calls until long after the primary dispatcher has completed the incident report and moved on to other incoming calls. The radio dispatcher who broadcasts the incident will use the incident report rather than working cooperatively and coterminously with the call-taker. Without any spatial or even temporal

proximity, these dispatchers must rely on impoverished forms of communication as they assign units to an incident, such as the abbreviated notes left in incident reports. They also rely on modes of communication that conflict with dispatchers; attention to other dispatch tasks, such as instant messages, emails, or direct radio communications. Meanwhile dispatchers in West City, Campus, and Mid City work in dispatch teams proximally situated in the dispatch center and were much more capable of quickly communicating and adapting the distribution of work in response to an emergency.

Finally, the location of the dispatch center within the department influenced dispatchers' social and operation integration with the department. Dispatchers in centrally located dispatch centers were more likely to be informed about the progress of incidents after the emergency call had ended and express that their work was a part of larger department operations. Dispatchers in centrally located dispatch centers were also much more likely to express law and order sentiments and more frequently took the initiative to actively seek information related to ongoing incidents after the emergency call ended. Dispatchers at remote centers were much less likely to interact with officers on a regular basis, and were often less invested in the outcome of the incidents reported to them. These dispatchers also more frequently responded to callers with non-emergency situations when there was no more pressing matter.

This chapter has focused on describing the dispatch environment and re-viewing classic dispatch practices in the context of that environment. Dispatchers have long been perceived as individual actors who are restricted to telephone lines and radio transmissions. The nature of dispatch itself, however, is rapidly changing as dispatchers become increasingly connected to their communities through visual information technologies. To examine how visual information is being incorporated into dispatch practices, it is necessary to move beyond analyses of

conversational transcripts. The following chapter specifically focuses on the rising use of visual information technologies in dispatch practices and the integration of visual technologies into this dispatch environment.

Chapter 3: Visual Technologies in Emergency Response

Introduction – Seeing is Believing

The 9-1-1 emergency response system has classically been seen as a system that operates principally through language in the dialogues that take place between callers and emergency call-takers. Over the past decade, however, the rapid advent and adoption of information and communication technologies has fundamentally changed the role of the "telephone" in daily life. Surveys suggest that by the end of 2013 over 50% of American adults owned a smartphone, while over a third of American households now rely entirely on wireless communication devices. The penetration of smartphones into American daily life and decline of traditional landline telephones corresponds with sweeping changes in when, where, and how people communicate with one another. A typical smartphone functions as much more than a device for verbal communication; it serves as a mobile personal information hub. In particular it incorporates the capacity to create and transmit visual information where telephones only communicated audio information.

At the same time, the emergency response system has been slow to adapt to changes in consumer trends. 9-1-1 is a system comprised of over 8100 public-safety answering points (PSAPs) run by independent authorities. These 9-1-1 call centers follow a broad set of guidelines established by the Federal Communications Commission, but the core framework of the 9-1-1 system has remained largely unchanged since its creation in the late 1960s. During the Virginia Tech shootings in 2007 witnesses and victims sent an unknown but significant number of text messages to "9-1-1." With no infrastructure in place to process text message, these messages were effectively sent nowhere. Virginia Tech provided a clear example of 9-1-1's outdated infrastructure, and the FCC began to craft a plan for bringing 9-1-1 in line with the public's

diversifying methods of communication. These efforts were consolidated under the label of Next Generation 9-1-1, or NG911, and in August of 2011 the FCC announced a five-step plan for the adoption of NG911 which would "enable consumers to send text, photos, and videos to PSAPs."

Previous technological innovations in consumer communications, such as mobile phone and voice-over-internet protocol, have expanded the penetration of audio transmission devices into daily life. However, these technologies essentially allowed callers to make the same kinds of calls as traditional landline phones, but from a larger and larger set of spaces. Visual information, however, is distinct from audio information and brings both the capacity for new tasks to be performed in dispatch and places new demands on the dispatchers receiving this information. Even without the direct transmission of visual information to 9-1-1, the increasing presence of visual tools linked to emergency services such as intersection cameras or mapping software requires acknowledgement of the visual field. This chapter sets out to incorporate the visual field into the examination of 9-1-1 emergency services and practices through observations carried out in 5 PSAPs, or call centers, in southern California. What is "seen" in the conduct of emergency dispatching, how is "seeing" accomplished, and what institutional practices and actions result from the capacity for dispatchers to see into their communities? Underlying these practices also runs a second set of questions. What motivates the application of visual technologies in emergency response? What must be seen and why?

Incorporating the Visual - Reconsidering an Empty Field

The visual field denotes everything that an individual is capable of visually apprehending at any given moment. No previous study of emergency calls for service has focused directly on any aspect of the dispatcher's visual field, instead preferring to examine dispatch practices almost solely through a limited aspect of the audio field, those things that a dispatcher can hear

while processing a call. Calls to 9-1-1 have almost uniformly been studied as linguistic objects and their analysis driven by a linguistic paradigm focusing on the conversations that take place between callers and dispatchers. Within this paradigm the visual field serves as a site for the storage of information related to an emergency call while the dispatcher's "work" takes place in the spoken language of the emergency call. Under this model, a call progresses as the dispatcher extracts or obtains information relevant to institutional processes, and this information is then stored in a physical or electronic dispatch document. Often successful emergency response is determined by the time that it takes for an institutional unit to arrive on scene, and a successful department is one that *clears*, answers and processes, the highest proportion of incoming calls. However, as visual information becomes increasingly integrated into dispatch practices, a dispatcher may be required to process both incoming visual and audio information simultaneously and provide services whose value is not captured in classic measures of emergency response efficacy. Among the tasks that dispatchers perform, two of these tasks form the "core" of dispatcher responsibilities: processing incoming calls reporting an emergency and maintaining communications with police units on duty. These tasks have been previously examined through the radio or telephone communications. This section revisits these tasks from a visual perspective and serves as a starting point for the examination of the visual field in dispatch practices.

Visual Displays of "Classic" 9-1-1 Data

The dispatcher's visual field is dominated by a series of monitors that display an array of information and tools used in emergency response. The CAD, or computer aided dispatch, is the heart of every dispatch desk. The CAD is a suite of tools allows dispatchers to create incident reports (IRs) and manage the units that respond to them. Four of the departments use a generic

CAD, while Mid City uses a customized CAD. When a call comes in to the dispatch center, the dispatcher immediately begins to collect and enter information necessary to create an incident report. These IRs consist of structured fields for information that reflect the kinds of information that the RP, reporting person or reporting party, can supply, such as names, location, or descriptions. Every dispatcher signed into the CAD can monitor an ongoing incident or access the database of prior incident reports.

Paired with the processing of calls, dispatchers perform the equally core task of maintaining contact with and updating the status of units on duty. The CAD displays a list if active units that gives their location, status and other useful information. Units are required to check in at regular intervals or a dispatcher, usually a dispatcher assigned to radio duties, will actively contact the unit to confirm its status. Communications between dispatchers and units are structured very differently than conversations with callers. Unlike a telephone, radio communications are overheard by everyone on that radio frequency and only one party at a time can transmit across a radio frequency. Subsequently, radio communications are highly structured and consist almost entirely of radio and police jargon. The CAD displays unit information in this format, so that each line displays a unit's operational status.

Despite being identical in four of the five sites visited, the utility of these tools as visual displays of information could vary greatly from site to site. Two "problematic" themes emerged related to the organization of visual information at the dispatch desk. First, dispatchers at small centers often have the freedom to speak to each other directly to convey information. At large centers, and rarely during very active periods at smaller centers, dispatchers would communicate through comments on an incident report. At these moments the screens in front of a dispatcher become not just repositories for information but also a source of new information. Unlike the

ANI/ALI information displayed at the start of a call, this information is dynamic and requires the dispatcher to actively monitor it as a call progresses. Whereas information typically enters through audio field and is stored in the visual field, these scenarios requires dispatchers to process information from visual and audio fields simultaneously while continuing to store information in the visual field. Second, visual displays of information are constrained by the physical parameters of the display. The utility of a visual display simply related to the amount of information displayed with "more" information being strictly "better" than less information. Sometimes the amount of information displayed can become too large, and problematic for use by a viewer.

Cases of "too much information" in various departments regularly created a conflict in the flow and processing of information in emergency response. In Big City dispatchers are usually unable to speak directly to other dispatchers while processing calls. A primary dispatcher who is speaking with a caller may be across the floor from the radio dispatcher in communication with responding units, or in even more complicated scenarios many dispatchers scattered across the center may receive calls from various parties at a public emergency. An exemplary case occurred when an erratic driver struck a parked but occupied car and quickly fled the scene. Multiple witnesses immediately dialed 9-1-1 to report the incident, and several dispatchers initiated an incident report. The dispatcher was aware that there would likely be many callers, but by chance had received the call of a party in the struck vehicle. As they collected information a portion of their attention was diverted to determining if another dispatcher had already created an incident. An existing record *had* been created nearly two minutes earlier by a witness in another vehicle, with suspect and suspect vehicle descriptions already compiled from at least three other witnesses.

However in the act of locating and processing this information, the routine dispatch discourse with the caller was disrupted. Question and answer sequences in particular were interrupted by pauses as the dispatcher negotiated the task of taking in information from the existing report, adding a note on the incident saying she had the received the victim's telephone call, and taking a "lead" role by assuming control of the existing IR. On several occasions the shaken-up caller prompted the dispatcher for a response during these silences, and the dispatcher informed him that a number of witnesses had already reported the accident. Once the dispatcher had control of the call she resumed her regular pace, relaying the status of police and ambulance en route, corroborating the victim's report with witness reports, and maintaining a calm discourse with the victim.

Similarly, after several visits for observations at Big City, their dispatch stations received a 6th screen in order to display information that had become crowded in the existing visual space. Because dispatchers at Big City essentially work in isolation, there is no environment in which to place information for multiple dispatchers to access. Thus, any addition to the dispatch desk must be made to the nearly 100 stations in the dispatch center. Dispatchers either ignored this screen or found it mechanically frustrating to use in the flow of a typical call.

Examples such as these illustrate that the visual field is not an "empty" dimension in which information is stored while work continues within the emergency call discourse. In general the presence of incoming information located in the visual field, even the immediate visual field of the dispatch desk, could disrupt a dispatcher's ability to perform the core dispatch task of processing information from a caller and creating an incident report. Equally notable is that such disruptions were not present in calls that proceeded without input from the visual field, nor were the types and impact of visual information uniform across the departments.

Maps

Every dispatch center employed maps in at least some capacity. Maps come in a number of forms and are used for numerous dispatch activities. Most of the maps used in dispatch are symbolic maps that display representations rather than an actual image of locations within the city. The representations and information displayed on these maps is tailored to their functions. In general maps are used to accomplish three kinds of dispatch tasks. First, maps provide an easy way for dispatchers to track the movement and location of department units. Second, maps can serve to visually locate emergency callers, suspects, and incidents within the community. Finally, maps can provide tactical knowledge that dispatchers may personally use during operations or that they can pass on to responding units.

Mid City, West City and East City all employ maps to display the location of department vehicles. These maps provide a two-dimensional top-down display of the geographic region associated with the department's jurisdiction, boundaries with nearby jurisdictions, and some portions of these nearby jurisdictions. Details on the map are generally limited to lines representing roads and polygons that mark buildings, or regions of interest to the jurisdiction such as city parks. Overlaid on this static map are two-dimensional police-vehicle icons labeled with the unit number of their corresponding units. Unit locations are updated automatically though locators placed on department vehicles.

These unit location maps do not provide "more" information than the CAD, rather they provide a *different kind* of information. At a glance, a dispatcher can refer to the map to know the current location of a unit, the direction that it is heading, and the speed at which the unit is moving. The spatial orientation of the vehicle is immediately apparent on the unit map, while the

CAD display is organized to display a unit's operational status. These maps also help to minimize radio traffic, allowing dispatchers to passively keep an eye on unit locations.

One evening in Mid City, a combination of training, holidays, and sickness left the city of 250,000 patrolled by only eight active units, four in each patrol serving half of the city. Consequently, the location of active units became a critical factor in decisions about which unit should respond to an emergency. That evening a call came in from a large retail store on the far west side of the city. The loss prevention manager at the store had noticed a furtive man acting erratically around their store. He was monitored and observed using a box cutter to open and remove parts from boxes in the store. The presence of a possible weapon and the suspicion of a mentally disturbed or mentally challenged individual gave the call a high priority, and the dispatcher had to make a decision about which unit to send. However the nearest unit was over 10 minutes away, as chance had pulled all of the departments units toward the eastern portions of the city. Usually in these scenarios a dispatcher would consult the CAD when making a decision to pull a nearby unit off a lower priority call. In this case all units were on lower priority calls and the dispatcher consulted the unit location map to find the vehicle that could get there the *fastest and* prioritized selecting a unit that was already in motion and on a major city thoroughfare. The unit location map also continued to provide the dispatcher with critical information for instructing the loss prevention team as the situation in their store continued to unfold. Several minutes into the call, the suspect began to make his way out of the store. Based on her knowledge of the approaching vehicle's movement and direction, she could inform the manager how long to monitor the suspect, where to meet the incoming unit, and provide precise instructions to the incoming unit.

Similar to unit location maps, each center used some method to visually represent the location of an incoming caller and addresses associated with ongoing incidents. At the most basic level, the ANI/ALI information with each call provides some kind of geographic information about the call. Landline phones are associated with a physical address, so that an incoming landline is associated automatically with a physical address. Cellular phones provide a varying level of geographic information. For an older cell phone, the ANI/ALI information will provide the coordinates of the nearest cellular tower and a radius within which the phone is likely to fall. Newer cell phones provide estimated geographic coordinates and a radius reflecting the uncertainty of the calculated location. Prepaid or disposable cell phones generally provide no geographic information at all.

More generally dispatchers always engage in the activity of *locating* a caller and/or a reported incident. The principal use of geographic information is to determine if a caller lies within the receiving center's jurisdictional boundaries or there is a chance they are in another jurisdiction. It is rare but not unusual for a call near a boundary between jurisdictions to be routed to the wrong center. In some cases one side of a street may fall in one jurisdiction while the other side falls in another or a street may continue through several jurisdictions. In one extreme case, a caller dialing 9-1-1 was connected to a center over 40 miles away from their current location and in another county.

Regardless of the automatic geographic information generated when a caller dials 9-1-1, the emergency call taker always immediately asks the caller for their current location. Often the information is consistent with the caller's reported location, but occasionally a caller does not know their current location. In these situations, the dispatcher will begin a sequence of questions used to determine the location of the caller. This sequence is almost always accompanied by a

dispatcher opening or turning their attention to an electronic map. Generally the dispatcher asks the caller to provide their best estimate or any knowledge they have about their current location. Beginning there, dispatchers will focus on orientation around geographic or structural landmarks through "are you near?" and "can you see?" questions. Intersections are also major locators, and whenever possible a dispatcher will ask a lost caller if they are near an intersection, even if they do not know the names.

Finally, dispatchers sometimes employ maps to assist units involved with a tactical operation, such as establishing a perimeter, designating a search area, or transporting prisoners. Maps provide a top-down perspective of an area and display features useful to these spatial tasks. In one instance in Big City the researcher joined a radio dispatcher immediately after a caller reported seeing a body in a wooded, hilly, and sparsely populated part of the city. In the following minutes as units responded two additional callers also reported hearing a gunshot and seeing a man fleeing down the hill and the dead body report escalated to a possible homicide with a fleeing fugitive. The terrain of the area provided a number of challenges to responding units, with multiple roads winding chaotically up the hillside and line of sight frequently disrupted by trees and geographic features. This area, however, was surrounded by a dense urban region that would limit the movements of a fleeing suspect and naturally channel him towards several exit points. From an overhead perspective the dispatcher identified these locations and directed arriving units to them. About 15 minutes later a subsequent caller, noticing police vehicles and helicopter activity, called to report seeing a stranger near his property and shortly thereafter officers located the suspect trying to hide in a shed.

Navigation through Insider Knowledge

The above trends exemplify the use of maps across the four traditional sites associated with a city jurisdiction. Unlike these departments, however, Campus dispatch's jurisdiction serves a small centralized campus and several of its associated resources throughout the county. The central campus has few roads, and officers often navigate on foot rather than in a patrol vehicle. Unlike an officer in a city, knowing an address or building is often insufficient information for an officer to respond to a call. Buildings on campus can house thousands of students and have hundreds of individual rooms, so units usually need to know the floor and room number where an incident is taking place. Consequently, traditional maps provide much less utility for performing spatial tasks in campus dispatch, and campus dispatchers used maps much less frequently than their city dispatch counterparts. Two dimensional ANI/ALI coordinates are particularly insufficient when an incident takes place in a large building with many floors, and when the typical estimated location radius is as large as the central campus During research campus dispatch did begin to test an upgraded mapping utility that could locate some cell-phone callers with an accuracy of several meters, but this technology had limited use for callers in large structures with many floors.

Instead, units navigate through their intimate knowledge of the campus facilities, using structure names, room numbers, and landmarks to describe their location. The campus also employs a series of lighted stations around campus that any passerby can use to dial a direct line in to campus dispatch that will ring on a dedicated phone placed between the two dispatch stations. When this phone rings, it indicates which station is calling, and an officer will check that box even if no voice contact is made with the caller. Most of these call boxes are in open locations outside of campus buildings, and officers know their locations by heart. Frequently, units navigating the campus outside of buildings would refer to these call boxes by number as a

way of conveying their location. Nonetheless the task of locating a caller was often more difficult in the tight confines of the campus than for callers lost in a city. In one particularly endearing incident, a series of callers on campus reported a family of ducks wandering in a campus parking structure and were concerned that they might be hurt. As the responding officer attempted to locate the ducks and determine if they were in danger or hurt, calls continued to come in from students concerned about them as they left the parking structure and started wandering across campus. These callers consistently described their locations through proximity to a nearby building. The responding officer was then forced to circle buildings looking for them, and new callers continually reported a new location before the officer finished his search. Eventually the ducks were reportedly seen crossing a road and leaving campus grounds without being visually located by the officer.

Another series of calls revealed campus dispatchers' high reliance on communications from landline phones to located exact positions within the structures they serve. Campus dispatch serves a number of university resources throughout South County, including some facilities for medical research and treatment. For over a month, technological renovations at some of these facilities left the landline phones un-associated with a physical location, when normally any call would be associated with building and room information. In one particularly tense case, a call from a treatment area came in indicating a possibly volatile situation and gave their general location before hanging up. Without the specific knowledge of where to send response, the dispatcher immediately contacted the emergency line at the facility to get more information. Within the emergency response hierarchy, a 9-1-1 dispatcher is expected to receive the complete support of any lower-tier emergency dispatch workers. However rather than assisting the 9-1-1 dispatcher, the hospital dispatcher informed him that he had dialed an emergency line as if the

call was inappropriate because such calls are not routine. The 9-1-1 dispatcher was visibly frustrated, but evenly repeated his introduction completely and emphasized his identity as a 9-1-1 dispatcher with an active incident and the ongoing situation with landline calls from the facility. Before the call was complete, the dispatch supervisor had picked up on the situation and already completed a draft of a complaint to the facility's emergency response supervisor. During this period a handful of other callers from the facility were unable to determine their location or destination. The responding dispatchers had to access electronic floor plans for the facility to help callers navigate the facility, a practice which never occurred with functioning lines.

Recognizing and Repairing Misinformation and Incomplete Information

While unusual in its scale at campus dispatch, problems with landline geographic information also occurred at other centers. *Misinformation* can occur in a number of situations and often proved much more detrimental to emergency response times than cases of missing information. Telephone companies are required to maintain accurate associations between landline phones and physical addresses, but these updates are not always immediate or accurate. Similarly voice-over-internet-protocol users frequently fail to update their address when they move, and calls to 9-1-1 will be routed to the call center servicing their original address. On the other hand, malicious or harassing callers sometimes dial from a phone that automatically generates an estimated geographic fix while reporting a false incident at a different location.

When a caller reports a location different from the geographic information associated with their call, the dispatcher is forced to make a judgment call. Generally a dispatcher will ignore the misinformation when the caller provides a clear and precise location, such as a home address. However in cases where the caller is unsure of their location, the task of locating the caller can become a cooperative effort between dispatchers and the caller. In one case, a caller in

Big City dialed 9-1-1 from a public telephone man because a man had collapsed in the street, appeared to be unconscious, and was in danger of being struck by a vehicle. The dispatcher's map automatically displayed the location of the public phone as maintained by the operating phone company, but the caller reported their current location as a drastically different part of town.

Normally, unless there is cause to suspect a false report, the dispatcher will ask the caller to confirm their location and then ignore the automatic location information. In this instance, however, the caller reported a nearest intersection that did not *exist; a*lthough both roads did exist without intersecting. The dispatcher initiated contact with a paramedic dispatcher, who sent an ambulance to the ALI location, and the 9-1-1 dispatcher continued to try and determine the location of the caller. When asked if they were near the ALI location, the caller said they were 15 blocks away, and also identified several nearby stores. The dispatcher than transferred the caller to the paramedic dispatcher, but continued to listen to the call while focusing on finding locations that matched the caller's description. Using a search of store addresses and several street maps, the dispatcher found a likely location and re-opened contact with the paramedic dispatcher to give the possible location. A second ambulance was sent to that location where it located the caller and unconscious man. At some point the telephone booth had been moved without its operating company updating its location.

More than other locations, Big City dispatch receives a consistent stream of inappropriate, fake, or malicious calls. In smaller centers the proximity of dispatchers ensures that each dispatcher is aware of these calls and will recognize a repeat caller. However, the organization of Big City dispatchers makes it impossible to socially distribute information about these kinds of calls. Instead dispatchers rely on an incident map which shows the location of the

current call and, unlike other centers, the *location and time* of other recent 9-1-1 calls. Consequently, Big City dispatchers can, at a glance, interpret the spatial and temporal pattern of incoming calls to recognize certain scenarios. Malicious callers are often recognized by a tight cluster of incoming calls that come in at regular intervals. Before the dispatcher even answers the call, they can see that a person from the same number and/or location has placed numerous calls over the past few hours. Generally these callers do not identify themselves, but dispatchers come to know and recognize them on an individual level and often give those names. For instance caller "Winston" consistently dials the center over a dozen times in the afternoon from a location near Winston Street, and dispatchers recognize his calls from the call map before they even answer the call.

Similarly, adjacent dispatchers within smaller centers often receive multiple calls reporting the same event and can easily share information as they respond to the calls. Big city dispatchers do not have the same capacity and rely on the map of recent calls to distinguish such events. Incidents with multiple reports also come in clusters, particularly when incidents occur in a public locations or neighborhoods with dense housing. Unlike harassing callers, these situations exhibit a high density of calls within a short period of time, sometimes within a few seconds of one another. Big City dispatchers seeing this pattern of calls will often check for existing incidents before beginning a new incident report, and many dispatchers at once may end up commenting on an incident to share their caller's information.

Direct Visual Input in Dispatch

So far we have discussed the storage of textual information in the visual field and visual representations of dispatch information on maps. Each center also deployed multiple technologies allowing dispatchers to see directly into the community they serve. However these

technologies have generally been adopted on a department-by-department basis, and there were large variations in their presence and utility between centers. This section describes how such tools are situated in the dispatch environment, illustrates how they are incorporated into daily routines, and identifies several issues consistently related to these technologies across departments.

Visual Tools in Each Dispatch Center

East City dispatch's two cloistered dispatch desks are surrounded by a series of screens that display live images from around the city. Virtually every open space along the walls above eye-level has been covered by one of these flat-screen displays, and even the window into the department's adjacent front office has become almost entirely obstructed. These displays show a number of city properties, including city parks, athletic fields, city hall, and a recently constructed parking structure in the city's historic district. They also show the department's jail cells and views of entrances and exits from the building. A small television sits between the two dispatch desks, and a computer with internet access sits behind them.

With more space and less area to cover, Campus dispatch has only some of its wall space dedicated to visual feeds from around the department and campus. Several screens sit above the dispatch desks and show the areas immediately surrounding the campus police department, as well as a handful of sensitive research locations on campus. A television is mounted on the wall in the corner to the dispatchers' left.

West City's new dispatch center has bare walls, with 3 dispatch desks set up along half of one of the room's four walls. A separate dispatch cubicle full of screens sits apart from the dispatch desks displaying a number of live feeds from many of the city's major intersection cameras. A small television sits between and above the two main dispatch desks.

Mid City dispatch has dedicated the "front" wall of its dispatch center to visual displays for video feeds, including several projection screens and much larger displays than those used at other centers. A portion of the smaller displays continually show locations around the department, but the central screens are often used to display ongoing events around the city. Mid City dispatchers can access the feed from any of the city's traffic cameras and security cameras at many of the city's shopping centers. Controls for these systems are located at a dedicated station near the front of the room.

Big City dispatch houses very little visual equipment compared to other centers. Within the center itself, only a single typical flat-screen television hangs 20 feet above the dispatch center's command bridge. Big City's tendency to high specialize its workers has led to the creation of a separate department, however, that coordinates incoming visual information from around the city. Attempts to develop a means for callers to submit photographs or video directly to Big City police department were ongoing during research and met with very limited success.

Impetus for use

Although these visual feeds are essentially "always on" in the dispatch center, they are usually not actively monitored by dispatchers. Instead, some action or event would trigger a dispatcher or group of dispatchers to observe incoming visual information or to actively deploy other visual tools. When and why do dispatchers decide to utilize these tools? Again to some degree this varied from site to site.

Dispatchers at Campus dispatch most frequently use internal security cameras, often to keep an eye on activity within the department but also for social purposes. Dispatchers' duties include maintaining an up-to-date log of unit locations, and being able to see officers' movement, demeanor, and expressions often provides them with a sense of how events are

playing out around the department. Officers at every location frequently "forgot" to update their status, and will often appear at the station while still logged as being at an incident. In a small department like Campus, these mistakes are often noticed directly by the dispatcher before the unit corrects its error. Seeing an officer walking around the building while still logged at another scene often drew sarcastic comments from dispatchers as they contacted the unit for an update of their location. Campus dispatch is a small center where dispatchers work and interact regularly with officers who frequently visit the dispatch center, and dispatchers also paid particular attention to internal cameras to gauge the attitude and location of active units in the dispatch center.

Dispatchers at Campus often commented on the demeanor of returning units, particularly when they returned from a call that was particularly frustrating or funny. Comments like "oh [he] does *not* look happy" or "here it comes" would alert other dispatchers to an incoming officer's demeanor before they were contacted. In many cases such comments immediately preceded an officer's visit to the dispatch center. Since campus dispatch is located in a separate structure across a small pavilion from the central department building, the demeanor and pace of an officer were often apparent to dispatchers as the crossed the small courtyard between buildings. While sometimes serious, these situations were often humorous. In one case a dispatcher relayed some new information to a detective working an ongoing case. The detective was confused and, rather than trying to clarify over the phone, he hung up and moments later could be seen crossing the pavilion in long strides. "Oh god, he's coming here" the dispatcher remarked wryly, and moments later he arrived, beginning immediately with "Ok *what's* going on?" before getting a face-to-face explanation.

With a coordinated emphasis on incorporating visual information from around the city, Mid City dispatch consistently uses its visual capacities in routine dispatch activities and occasionally functions as a command center for police operations during certain situations. More than any other center, direct feeds from cameras around the city play a role in daily dispatch practices. Whenever possible, dispatchers attempt to get a view of what is happening in the community around them. In one case, a caller in a residential neighborhood reported hearing a vehicle crash in the distance. Although the caller could not locate an accident or specify a clear direction, dispatchers checked nearby intersection cameras for sign of any crash while directing a unit to check the area. In another case a caller reported a missing child from their home, and again dispatchers used nearby cameras to search for any children matching the description. Dispatchers also kept an eye on officers reporting a traffic stop or responding to incidents whenever possible through nearby intersection cameras. Thus they could often see how an incident was progressing without the direct input of the responding unit and directly observe the arrival of fire and ambulance vehicles, questioning of suspects, and even arrests.

Although not common, certain situations prompt the watch commander, and sometimes the chief of police, to come to the dispatch center to *watch* events unfolding. For dispatchers in Mid City, seeing a commanding officer coming to the center signals that the role of the dispatcher center is about to change, and many dispatchers adjust their practices accordingly. During nearly 20 hours of research the chief or watch commander visited the dispatch center only three times. The chief visited once to directly observe units responding to a bomb threat at the city's largest shopping center, while a watch commander came to observe unfolding events twice at scenes where an officer had requested backup.

Utility and Placement of Visual Information

The location of visual information tools had a profound impact on their utility during routine daily activities in dispatch. The dispatch desk functions as the focal point for all dispatch activities, while monitors and displays occupy the environment around the dispatch desk. While many of the same kinds of visual devices occupied each of the dispatch environments, some were awkward or impossible to use during an actual call.

West City provided the clearest case of technology that went essentially unused. Like Mid City, West City utilizes intersection cameras that allow dispatchers to see the immediate vicinity of many major city intersections. However, West City dispatch uses a series of small monitor displays placed within their own dedicated cubicle as the interface for these cameras. In order to view or manipulate these cameras, West City dispatchers must leave their desks and walk across the room. At no point during research did any dispatcher refer to or use these cameras because of any ongoing emergency situation.

East City's cramped organization also revealed how the location of visual resources could impact their utility in both positive and negative ways. Dispatchers in small East City have frequent downtime between calls, and occasionally glance at the screens showing camera feeds from the city's downtown parking structure. In one case a dispatcher noticed several teenage boys walking through the structure, and moments later received a call from a concerned woman who thought the boys were going "to smoke pot and skateboard on the roof." Because she had already seen the boys, the dispatcher could begin to search through the camera feeds to try and find them before getting a description from the caller. Following that incident, the dispatcher relayed a story about an incident the previous weekend. Late at night, she looked up and noticed a man walking through the structure randomly smashing car windshields with a bat. From an institutional perspective it created an odd situation where the dispatcher was the "reporting

party" on the incident report, and the dispatcher provided all incident information first hand while directing a unit to the scene. She described the situation as "exciting" and said had kept a closer eye on the parking lot cameras since the incident.

At the same time, East City dispatchers also struggle to access information available on the internet. In general departments did not allow a computer to be connected to the internet while also being used for 9-1-1 services because it would make emergency response susceptible to internet attack. In some departments a separate machine with internet connectivity is connected to a display at the dispatch desk. However, at East City the limited room means that there is no room for any extraneous equipment at the dispatch desks. Instead a computer with internet access sits behind the dispatchers between the two dispatch desks. At no point during research did any dispatcher ever have the opportunity to use the machine, since it would involve turning around completely and facing away from the dispatch desk.

In one case, however, a caller from out of state reported that she was concerned about the welfare of an elderly relative living in East City. As a unit was en route to the address, the dispatcher used her tablet computer to access a Google map street view of the city. Using these images, she described the view of the house from the street to the officer, and identified locations of windows and an alternative entrance on the side of the home where the officer could attempt to determine if the hard-of-hearing resident was home. The officer was able to make visual contact with the resident through one of the side windows, who had not heard the phone ring for three days.

Personal Devices in Dispatch

As the above case illustrates, the internet offers access to a vast range of resources apart from the institutional tools incorporated within the dispatch center, and personal devices like

smart phones and tablet computers have made that information readily available to working dispatchers. While the FCC has recently focused on adapting the 9-1-1 system to changes in civilian communications, dispatchers also occasionally incorporate such devices into their daily routines. During research, it quickly became clear that personal devices like smartphones and tablets computers were an integral part of many dispatchers' daily routines. In some department the use of such devices was frowned upon, or even officially barred. Nonetheless dispatchers continued to use these devices for a number of purposes.

Dispatchers often work very long and odd hours, often for months at a time, particularly those who work night watch beginning late in the evening. Many dispatchers use personal devices to maintain social relationships and connections through texts or social media sites. One dispatcher, a mother who had recently been assigned to the night watch, called her home each morning when able to talk to her children before school. In general, however, dispatchers kept track of family news, maintained connections with friends, and even occasionally played games with each other between calls through personal devices. The context of these activities varied greatly from site to site. At smaller centers, dispatchers often have long breaks between calls. While some of this time is filled with administrative work or other tasks, there are sometimes slow days where these devices filled the majority of what would otherwise be empty time, although rarely a dispatcher would engage in a hobby like reading or knitting.

Administrative attitudes towards these devices varied greatly from site to site. While every dispatcher acknowledges that devices should never be used for social or entertainment purposes during an ongoing emergency, some departments strictly disallow their use. In once center, policy forbade the use of smart phones or laptop PCs while dispatchers were on duty, so some dispatchers purchased tablet computers to avoid these rules on a technicality. These

dispatchers felt that as long as they used these devices cautiously and discretely, no policy adjustment would be made to officially bar their use. At no point during observations did any dispatcher make a mistake or lapse that was associated with the use of a personal device. However on several occasions across sites dispatchers *did* use personal devices to access information relevant to ongoing calls, even in centers that barred their use.

The decision to use a personal device to access information during an emergency often hinged upon the convenience, utility, and accessibility of information on personal devices. In one case, a dispatch center's internet service was undergoing maintenance and its internet connections were slow or disconnected occasionally. A caller reported that he had returned to his car to find evidence of damage from a hit and run but did not know his exact address or location, so the dispatcher used his phone to find a map of the area and located the caller using nearby landmarks. In another case a radio dispatcher needed to establish a perimeter, and used his tablet computer to find actual photographs of the area rather than relying on the department's symbolic street maps. These devices also had the benefit of being mobile, and in both cases the dispatcher could leave them upright on their desk to place information within their field of view.

Televisions

Televisions were present in each of the participating dispatch centers and located so that each dispatcher could view the television from their seat. In general televisions remained on throughout the day, often tuned to local news channels and muted with closed captioning. During late night and early morning periods, televisions were almost always turned off. Occasionally televisions were used for entertainment, particularly to watch sports. Nonetheless televisions were never seen as a potential distraction for working dispatchers. Instead, they provided a very

different kind of connection with their surrounding communities than institutional and personal devices.

The utility of televisions varied greatly between North County and South County due to differences in their communications infrastructures. All emergency radio communications in South County fall under the jurisdiction of a central body, which provides broad guidelines to manage radio traffic and allocate frequencies for local and county use. In case of a large scale disaster or a major incident, this authority will quickly relay relevant information on county-wide frequencies. Meanwhile North County has no analogous body. Two cases particularly illustrated how the information environment impacted the utility and application of televisions in dispatch: vehicle pursuits and manhunts. These scenarios are discussed in depth below.

Vehicle pursuits are a common occurrence in the continuous urban sprawl that covers North County, South County, and other neighboring counties. Once these pursuits reach any of the region's freeways, they are quickly picked up by local news stations. The most volatile pursuit occurred during a "quiet" evening in Campus dispatch. A group of young men robbed a pawn shop in a neighboring county, taking jewelry before shooting and killing the cashier and fleeing in a stolen vehicle. The following pursuit eventually spanned four counties and made its way through East City in North County before carrying on through South County and back into a different part of North County.

Campus dispatchers became aware of the pursuit suddenly when South County helicopter pilot "Angel" announced an incoming pursuit across South County's tactical frequency. Although far from Campus jurisdiction, one dispatcher immediately began checking local channels for coverage of the pursuit while the other found online road maps for the area of the pursuit. As the pursuit unfolded, dispatchers followed the progress of the chase in three ways.

Frist, they could watch as a local news helicopter following the pursuit maintained a live view that remained focused on the vehicle throughout the incident. Second, they were able to monitor the radio communications between the pursuit helicopter and units on the ground. Third, they were able to follow the progress of the pursuit on electronic road maps. Together, this allowed the dispatchers to monitor and evaluate the tactical decisions made throughout the pursuit and "play along" as units attempted to limit the driver's options and anticipate his decisions. Based on the combination of these information sources, dispatchers actively discussed the decisions Angel made, coordinated units on the ground and posed their own guesses about the driver's destination as he headed out of South County and towards the heart of Big City.

This sort of "practice" paid off several days later, when a pursuit occurred very close to Campus during a regular afternoon during instruction. Again a helicopter broadcast announced the pursuit as it picked up the suspect's vehicle near campus. Within moments the same dispatchers had found the televised coverage of the pursuit, opened local maps, and again followed along as the chase unfolded. In this case, however, there was a real possibility that the suspect would pass through the campus if he made one of several turns. Instead the driver seemed lost and drove in several large circles before being completely surrounded by following units, but until he was stopped the dispatchers marked the intersections leading towards campus and watched for any sign that he was coming towards an area densely packed with pedestrian and biking students.

Unlike South County, North County is dominated by one large city. It has no central communication authority and each department must maintain its own knowledge of events in surrounding communities. Here, news reports and televisions play a larger role in informing departments of relevant events in the surrounding jurisdictions. Big City maintains a separate

division that monitors media channels, websites, and other sources of information about current events. As the pursuit above illustrates, events in the region often have a direct or indirect impact on city operations, and often units from Big City will lend aid in emergencies that tax nearby smaller departments. Consequently, Big City dispatch center has very few of these resources. A lone television is mounted nearly 25 feet above the command bridge, and many dispatchers are too distant or face the wrong way to view it. East City's dispatch at the edge of South County keeps a small television between the two cloistered dispatch desks, where it sits largely unused during normal operations. On several occasions televised pursuits occurred near the city or passed through the city on freeways and drew little or no attention from dispatchers. Without the presence of a meaningful informational context, simply viewing ongoing events provided nothing of value to dispatchers at either of these sites. The case of televisions presented the strongest example of the interaction between the large-scale organization of emergency response institutions and the utility of devices in individual dispatch centers.

During research a particularly violent set of incidents put the entire region, including North County, South County, and other surrounding counties, on alert as a series of shootings targeting officers and their families occurred over a span of several days. During the subsequent manhunt for the suspect, research was suspended at two sites that had been specifically threatened but continued at other sites. During these the atmosphere at each department was palpably tense as everyone remained hyper-vigilant against possible threats. Within the dispatch centers, televisions remained permanently tuned to news coverage of the ongoing manhunt, and dispatchers kept frequent radio contact with all units.

Once again the communication context had a marked impact on how these departments handled the crisis. Dispatchers in departments with socially integrated dispatch departments

maintained contact with formal and informal connections as developments took place, and actively disseminated information as they learned. At these centers breaking developments in media were correlated with activity as dispatchers contacted friends or colleagues in other departments to learn "what was actually going on." These proactive efforts served to maintain a sense of control over the situation for dispatchers at these departments as they worked to deal with the stress and anxiety that the situation posed. Meanwhile at departments whose dispatchers were less integrated in daily department operations, dispatchers were more likely to use television as their primary source of news about the ongoing manhunt. Although they expressed just as much concern over the situation as dispatchers at other departments, they did not see themselves as being a part of those events beyond the need for extra caution in their routine activities.

Live Video Feeds

The final common element of visual information common in dispatch centers were live video feeds. In each department except Big City, numerous screens displayed live video feeds. Typically these screens were mounted on walls around the department, except in West City where displays were housed in their own half-cubicle. Screens usually vary in size between about 17 and 30 inches and are often mounted in clusters on walls around the department. These displays most commonly show live feed from cameras around the department and "key" locations in the surrounding community. Within the departments sites such as the jail cells, prisoner transfer docks, and the main lobby were commonly displayed. Community locations covered by live dispatch feeds were more varied, including parking structures, public parks, civic structures, traffic, and intersection cameras.

Although these screens remained on at all times, they were rarely incorporated into routine practices at most centers. Instead, specific events or circumstances trigger their use. These events can vary from the mundane to the extreme. For instance, Campus Dispatch can be reached through a telephone at the exterior of the building that is visible through an internal security camera. Dispatchers have come to recognize calls on that line from a static signal that is audible as soon as the call is answered. Thus, any time a call is made from that phone dispatchers will instantly look up at video displays to see who is calling. Most use of video feeds occurred opportunistically through traffic cameras as many incidents are reported from points near intersections, particularly major intersections within each city. Whenever location and time permitted, dispatchers might take a moment to find and adjust a traffic camera to overlook units responding to an incident. Often these feeds quickly receded back into the background as more calls came in and routine functions continued, with dispatchers only checking on them when they received communication from units on the scene or no other calls were being taken.

Mid City dispatch center stood apart from other departments in its use of direct visual feeds in daily routines, frequently employing these technologies in both ordinary daily dispatch tasks and adaptively in uncommon or unexpected situations. Mid City dispatchers have much more expansive access to visual information than dispatchers at other departments, mainly through security cameras at many private businesses at a number of shopping centers around the city. But differences in Mid City are not a product of "more" information but rather of more efficiently organized information. The Mid City dispatch center is organized around a wall dedicated to displaying live video feeds from around the department and city. Rather than the array of small monitors common in other departments, Mid City utilizes projection onto large central screen with a number of secondary screens around it. While some secondary screens

permanently display security feeds from around the department, the central screens remain free for use by any dispatcher in the room. Because there are far too many options for all to be displayed, a few selected views are selected as events unfold in the department, and dispatchers work cooperatively to keep the most relevant feeds visible.

The organization of Mid City dispatch center allows any dispatcher to use controls for their camera network without traveling far from the dispatch desk. Often, these devices are used and monitored cooperatively by several dispatchers at once. For instance if a backup dispatcher notices that units are being sent to a busy intersection, and has no tasks associated with the call, the dispatcher would often take a moment to find the relevant camera feed and display it on the central screen. Subsequently, dispatchers could jointly monitor the situation at a site between the routine activities associated with ordinary dispatch work. For example in one case the central screen was used to show police and fire units responding to a collision between a motorcycle and automobile near a major city intersection. Events progressed normally, and at one point a dispatcher pointed out that a man on the scene was being handcuffed. Thus dispatchers were able to anticipate tasks that the unit would request and had pre-emptively opened several databases which were shortly used to compile the offender's rap-sheet. Similarly during a bomb threat at a local shopping center, dispatchers cooperatively provided assistance to officers on the ground through a series of security camera feeds at the shopping center. Together, dispatchers continued to respond to routine calls while jointly scanning camera feeds to direct units to key locations and suspicious persons.

The Need to See

Each of the dispatch centers participating in this project was in the process of incorporating more visual devices into their dispatch centers. These efforts were motivated by a

mixture of goals and met with varied success. Throughout these efforts, the dispatchers I sat with sometimes voiced their frustrations and triumphs using these new tools, and occasionally their supervisors also spoke of their hopes and frustrations implementing new technologies.

The need for dispatchers to see into their surrounding communities was often framed around different priorities in different communities. In both East City and Campus dispatch I arrived one day to find that more screens had been added to the room for live camera feeds. With its tiny dispatch center, East City has very little space to hold these monitors, so displays are limited to "important" locations. Existing displays showed the department's jail cells, parking lot gate, and front lobby within the department. With its jailer acting as the night-shift backup dispatcher, he must continue to routinely monitor the well-being of their prisoners remotely while assisting in dispatch. The new screens were largely dedicated to monitoring city parks and some community sports facilities. One dispatcher explained that the new cameras and screens were added as a part of an initiative in response to the theft of metal wiring from these facilities, in which metal wiring and other loose metals are stripped and usually sold as scrap. Another set of screens displayed camera feeds from the city's new parking structure. The dispatch supervisor explained that the city had decided to build the parking structure two years earlier near the city's downtown district and train station, but had been concerned that the parking structure would provide an environment conducive to crime. Therefore a series of cameras at each level of the parking structure were permanently shown in the city dispatch center.

Campus dispatch was also engaged in preparation for an overhaul of the dispatch center. On several occasions during research contractors and department leaders met in the dispatch room to discuss upcoming changes. These conversations focused on themes of department security and increased visual access to the campus, for example with one dispatcher voicing

concern about the need for bullet-proof glass in the dispatch center windows. As a part of these changes, a series of monitors were added which would eventually serve to keep an eye on key staff locations. The dispatch supervisor particularly stressed the need for security to overlook the chancellor's residence. None of the campus parking structures was ever viewed through cameras not mentioned as a site needing observation. Even when a suicide jumper leapt to their death from one of these structures during the research period, no one suggested that being able to see what was happening in these structures might be important to campus safety.

While motivated by different priorities, both of these departments tailored targeted use of direct video feeds to specific issues using limited resources. In some cases, technology was deployed with no clear purpose or corresponding goal. In such cases dispatchers uniformly referred to these tools as something that was "there" but not relevant to their daily activities and their uses were limited to novel opportunities. The importance of a guiding purpose was clearest in West City dispatch. The city's intersection cameras sat unused in the corner, and at no point did any activity require their use. Meanwhile early on during research a pair of new screens was added above the dispatch cubicle walls in a location where each dispatcher could see them. These screens displayed street maps with the location and direction of the department's active units, and were frequently referenced by dispatchers as new incidents were reported without the specific need to motivate their use. These maps allowed dispatchers to more easily appraise the distribution of department resources for emergency response, so their purpose and function was immediately apparent. The video cameras provided a new kind of visual information to an environment built on auditory information, with no analogue in the existing information environment. Thus, without a stated purpose or associated dispatch tasks they remained, as dispatchers repeatedly labeled them, a "neat" but trivial addition to their daily routines.

Dispatchers at several centers expressed the sentiment that changes in their environment were essentially "handed down from on high" with no consideration for the actual function of the dispatch center. The clearest example came as Big City dispatch attempted to establish a system allowing callers to send photographs or video directly from their telephones to the city police department. When a caller said they had taken photos or recorded an incident, dispatchers would ask them if they would like to send that information to the police. If they agreed, dispatchers had to begin an external process to generate a temporary email address where callers could send their files. Once sent, these files could be accessed by staff in a completely different division of the department. In every one of these situations the regular dispatch sequence was interrupted by the awkward technological aside as the dispatcher attempted to explain the unintuitive and complicated procedure to submit the file. Once they were submitted, the dispatcher could not even access them. For example in one case a caller reported that several men had been seen entering a foreclosed home and suspected them of stripping the house of its pipes and wiring, which he indicated had become a problem in the neighborhood's empty homes. As soon as he mentioned that he had "taken some pictures" of the suspects the dispatcher initiated the process for the caller to submit the photographs. Upon completion, the caller expected that the dispatcher would be able to see the images, which the dispatcher could not. The caller's frustration was shared by the dispatcher, who expressed frustration with the new system but feared citation if the new procedure wasn't followed. After a short period, this system was shut down.

While sitting along with dispatchers at all sites, many expressed a mixture of things that they "wished" they could see during an emergency call and things that they feared to see. Largely, dispatchers wanted to be able to see vehicles or suspects, the two subjects of their most thorough descriptions and the source of frequent frustrating exchanges with callers. Some

dispatchers also expressed a wish to see landmarks or other environmental features, particularly when callers were unable to give their own locations. Generally speaking, dispatchers favored direct access to the kinds of information that they routinely processed by obtaining information from callers during routine call processing.

At the same time dispatchers and their supervisor were concerned about the possibilities of direct visual communication between callers and dispatchers. Many dispatchers voiced concerns about the potential to receive images directly from tragic scenes. The work of taking 9-1-1 calls is erratic, with a heavy flow of mostly "junk" calls such as "butt dials," or accidental calls from a phone in someone's pocket, inappropriate and harassing calls, calls from the mentally ill, or old and the lonely. Within these calls are a smaller set of legitimate calls for assistance, and yet again a portion of those calls are from individuals experiencing or witnessing a major emergency. Thus at a moment's notice, an otherwise calm or routine day of calls can become incredibly intense. While dispatchers are to some degree prepared for these calls and have the fortitude to handle them, they do still take an emotional and psychological toll. Several of the dispatch centers contained safe spaces designated for dispatchers who needed a break following an intense call, and all centers had a protocol for temporary relief when needed. For dispatchers then, the utility of being able to see through a caller's eyes is balanced by the risk that they will be exposed to gruesome images. One dispatcher, a former officer, confided that she could not continue working if she had to see some of the things that she heard. Another dispatch supervisor expressed concern that seeing images from an incident "isn't what these people signed up for" and that he would have to revise the dispatch job description in light of ongoing changes.

Together these topics represented the majority of talk about "seeing" that dispatchers expressed during sit-alongs. While department heads and dispatchers in general see the adoption of visual technologies as technological *progress*, merely having new technologies does not directly translate into a uniform improvement of dispatch practices. Instead, these technologies require a purpose to be utilized towards a specific set of goals. Without a clear directive, local concerns heavily swayed the application of visual technologies, and similar technologies were deployed towards very different concerns from place to place. In some cases technologies were added without a guiding purpose and had the potential to confuse or even complicate routine practices.

Conclusion

The advent and widespread adoption of visual technologies into dispatch practices is a multi-faceted phenomenon with implications for the way that supplicants communicate with emergency institutions, the role of departments in accessing and deploying visual tools, and the daily routines that constitute dispatch work. For much of its short history, the dispatcher's visual field has served as a location for the storage of incident information and a site for the production of *records* that accompany institutional action. As Edwin Hutchins suggests, the addition of visual tools to a task traditionally accomplished through conversation does not merely allow dispatchers to accomplish the same dispatch tasks that they have always accomplished, but provides them with an opportunity to perform new functions in emergency response. Below we discuss some of the key themes in the use of visual information tools observed across the 5 dispatch centers.

First, the "effective" utilization of visual tools contains many elements that cannot be captured through traditional measures of effective emergency response such as response time.

Dispatch has classically been accomplished through dialogue, and dispatchers often frame their work through the dominant *talking vs. doing* paradigm that devalues their work because it is *only talk*. Yet dispatchers are no longer workers who *just talk* but also workers who can see, sometimes in multiple capacities, into spaces before units arrive on the scene and from perspectives that no person on the ground can see. The idiom goes *seeing is believing* but for dispatchers it is more apt to say that *seeing is doing*. Dispatchers repeatedly used their capacity to see into the environment for tasks like providing tactical support to units, locating lost callers, looking for suspect vehicles, or keeping a watchful eye on units at an incident. Yet even while engaging in or discussing these activities, dispatchers frequently continued to speak about themselves as powerless actors. Institutionally, and individually, tasks accomplished through visual information inputs must needs be recognized and evaluated so that effective practices can be identified.

Second, the visual field in emergency dispatch has become a site where multiple forms of information compete for the dispatcher's attention. Indeed a dispatcher's visual attention is a common resource upon which all of these tools function. Dispatch is organized around a model which treats the caller as the source of information, the dispatcher as an institutional actor who translates information into actionable terms, and the visual field as a site for storage of these translations. Now, the visual field is both a source of information, from ANI/ALI data to symbolic representations to raw visual feeds, and the receptacle where dispatchers store the information they gain. The tension between the intake and storage of information increases as visual tools are incorporated into various levels of the dispatch center. Repeatedly across sites and situations, the spatial organization of visual information had the power to make visual information more or less accessible to a dispatcher during an actual call.

Third, the social organization of the dispatch team is equally important to the application of visual information as the spatial organization of the dispatch environment. Dispatchers performing individual tasks benefit from visual inputs which can be appraised quickly or at a glance, such as representative and summary data, and often can use these forms of data without disrupting the emergency response dialogue. Rich visual data and large amounts of data cannot be processed by an individual dispatcher, but are effectively used by dispatchers working in concert. In particular, groups excel at making sense of raw visual information where each dispatcher is free to focus or "notice" different aspects of a rich visual image.

Finally, purpose had a powerful impact on how tools were utilized from site to site. It is not sufficient for new devices to be placed in the dispatch environment under the banner of "progress" but for tasks and protocols to be established for their use. Without such direction, local concerns and individual differences between dispatchers often dictated when and how visual technologies were deployed. More importantly, the aimless addition of new technologies alienated dispatchers and could actually disrupt emergency response.

As more visual technologies are integrated into dispatch practices, dispatchers and dispatch centers will have to adapt new practices into their traditional routines. The issues discussed in this section represent a starting point for both the scholarly and the practical concerns with the visual evolution of the 9-1-1 system. No doubt, the increasing capacity for dispatchers to access visual information heralds a significant change in the kinds of tasks that dispatchers can perform during emergency response, but it also places new cognitive and psychological demands on dispatchers. While none of the participating department had successfully incorporated any technologies for callers to directly send photo or video

information, much of this chapter addresses topics that apply to visual information from any source and can inform the application of future visual tools.

Conclusion - Crime, Emergency, Discourse, and Technology

In chapter 1 we set out the case that the creation of the universal emergency number "9-1-1" and the attendant 9-1-1 system established to process emergency calls was a consequence of circumstances in which *emergency was governed through crime*. At this point crime and emergency were fundamentally linked with crime as the ascendant problem around which emergency response is organized for institutional response, and the question follows: (how) has the organization of emergency response around the problem of crime shaped the evolution of the emergency response system? The ethnographic examination of dispatch practices presented in chapters 2 and 3 approaches this question by charting the dispatch center as an information environment and examining issues and practices associated with adoption of visual information technologies in dispatch centers. Below we review the central findings of each chapter and their relevance to existing bodies of scholarly literature. Subsequently, we address binding all of these topics together and, perhaps most importantly, why critical inquiry into these topics within the emergency response system is equally vital to both scholars and emergency dispatchers. Finally, this project concludes with a list of recommendations and observations motivated by the questions and concerns voiced by dispatch worker throughout this project and informed by scholarship in hopes that future work will remain relevant and practical to dispatchers and scholars alike.

Governing Emergency Through Crime

Chapter one provides a case study in mechanisms by which the phenomenon of "governing through crime" takes place. Through an analysis of social and political discourse ranging from national presidential addresses to newspaper articles, government publications, private FCC communications, this chapter identifies specific semantic structures used to talk

about crime and emergency critical in the establishment of a universal emergency telephone number. Comparing arguments around a universal emergency number, "H-E-L-P" in the early 1960s against those in the late 1960s for 9-1-1, the emergency response number is demonstrably not a consequence of technological innovation but of political innovation as widespread of street crime and social disorder swept the nation's urban centers.

Public and presidential statements about crime and emergency in the 1960s were marked by two consistent features: formulations of crime as a problem for governance and exemplars of crime. Formulations of a problem are deployed as a way to re-orient problem and approach it from a specific angle so as to allow new solutions to be considered. Presidential formulations of crime shifted through the 1960s, and these shifts changed the context in which the debate over a universal emergency number took place.

Resistance to a universal emergency number during the early stages of the H-E-L-P initiative in California rested squarely on the shoulders of area police and fire chiefs, who framed their opposition in terms of jurisdictional control over the calls coming in to their departments. The war on crime changed the context of these claims by altering the jurisdictional grounds upon which these claims were based. Simultaneously, crime fear began to be framed as a distinct problem apart from actual incidents of crime, and the needs of emergency callers began to be predominantly imagined through the needs of crime victims. Both of these features marked presidential statements and crime commission reports before the launch of the war on crime, and subsequently became a common feature in both newspaper reports and FCC correspondences.

In the span of a few years, the idea of a universal emergency number went from being considered "absurd" and contrary to constitutional governance to being considered common sense. Police and fire chiefs derided Los Angeles city supervisor Hahn for his proposal in 1961,

but by 1968 found themselves regarded as out-of-touch champions of a ponderous and failing arrangement. Specifically such scenarios are a signpost for *how governing through crime is accomplished* through discourse. Formulations arm speakers with the heuristic lens to frame a problem in a new or novel way while exemplars provide a set of concrete scenarios to view through that heuristic lens. These structures are not only easy to identify in statements about crime and emergency, but they can also be traced as they are deployed across a range of settings by a range of individuals to frame and solve problems related to crime and emergency.

In chapters 2 and 3 we follow *governing through crime* into emergency response dispatch practices. At the broadest level we find some apparent hallmarks to signal crime remained the primary concern of the emergency response system. The 9-1-1 system is a vast social structure that began conterminously with the war on crime and funnels nearly all emergency reports though law enforcement apparatuses. The contribution that chapters 2 and 3, however, is through moving deeper past *governing through crime* as a monolithic phenomenon to find some of the *nuanced* and *conflicted* consequences that this arrangement has on daily dispatch practices and the adoption of new technologies into dispatch.

Many of the dispatchers I worked with described their motivation for working as "wanting to help people." Occasionally calls came in from people who were in need of help but for whom there was no valid institutional response or only undesired institutional responses. Consistently, dispatchers bent protocol as much as possible to help out people whom they were supposed to categorically reject. Often in these cases, dispatchers voiced concern that they could be penalized for taking the time to answer calls that they "weren't supposed to take." These moments point to the role of the 9-1-1 system in enforcing the line between "legitimate" emergencies for institutional response and situations which are seen as individual responsibility.

This tension was yet clearer in situations where a caller reported a suspicious situation but did not want police response. This ascendance of crime in the discourse of emergency response lives on in the hierarchical classification of emergency calls, with the primary question always being "does this need a police response" to which other questions are subordinate. Even after callers are "transferred" from police to other services, 9-1-1 dispatchers will sometimes continue to listen to the call in case the caller admits to illicit activity. 9-1-1 call takers actively negotiate a fine line between acting as punitive law enforcement agents and providing assistance every single day.

Technology is similarly deployed first towards law enforcement ends while other interests remain subordinate. The FCC has repeatedly relied on powerful emergency events to motivate technological changes in their press releases, but consistently use highly publicized violent crimes like Virginia Tech to motivate the need for changes. Now, as in the 1960s, criminal exemplars continue to motivate the need to adopt technologies into the 9-1-1 system while natural disasters or health emergencies remain absent from these motivating scenes. Likewise, the scenarios that motived their use in those departments were uniformly related to security or law and order outcomes, even when all of their applications were not towards those ends.

For future scholars in this area, I hope that this project provides inspiration to examine the role of discourse in governing through crime phenomena. From a broad sense of discourse as "what is generally said about a subject" to discourse as the conversations that take place in day-to-day life, discourse contains common and index-able structures which are deployed to change the way that listeners frame and solve problems. I also hope that this project dispels the shroud of

invisibility that cloaks the 9-1-1 system's relationship with the various "wars on crime" that have marked the American social and political landscape since its creation in 1969.

The Contextual Significance of Spoken Words

Linguistic scholars have contributed a significant body of work to the study of emergency calls for service. Much of this work was done between 1970 and 2000, with relatively few publications in the past decade. During that time, the landscape of emergency dispatching has become more integrated through computerized dispatch tools that allow multiple dispatchers to access and follow an ongoing incident. Accordingly dispatchers in most of the sites visited were organized into proximally seated social groups and often worked collaboratively on routine calls. Linguistic analyses of emergency calls use official call transcripts for their analyses, but these transcripts increasingly miss communications or cannot fully account for the meaning behind spoken words.

Dispatchers communicate in a number of ways that will not be recorded on a call transcript. In the simplest case, dispatchers often mute themselves to speak directly to other dispatchers or to vent frustrations or emotion while maintaining a calm and controlled demeanor within the call. Dispatchers also communicate through the core computer systems used at every dispatch desk, including emails, messaging programs, and annotations on incidents reports. More significantly, dispatchers communicate relevant information to nearby dispatchers through statements made during active calls.

Information can be rapidly transmitted from caller to call-taker to radio dispatcher to a unit on route in a matter of moments through the intentional overhearing of other dispatchers statements. This project suggests that in order to account entirely for an utterance's meaning and significance during an emergency call for service, research must account for the social and

information context in which these utterances occur. Furthermore, the concept of the "call" itself is often an unsatisfactory fiction as a unit of analysis. Groups of dispatchers are often working together on a number of ongoing incidents while continuing to respond to emergency calls for service. This coordination of tasks that takes place between multiple dispatchers working on multiple incidents and while communicating through multiple media will provide, I hope, a rich environment for future scholarship on language in working environments. This project has provided a rough initial map of the social and informational landscape within dispatch centers and, I believe, a richer description of actual dispatch environments than any previous work.

Implications for Dispatch Practices

During this project many dispatchers and dispatch supervisors expressed a number of concerns about various aspects of dispatch work in light of foreseeable changes coming to their dispatch centers. How do social theory and dispatch practice mutually benefit from scholastic research? The 9-1-1 system is fundamentally linked with the social world and itself a social environment. While the FCC sets broad guiding policy and organizes the infrastructure of the 9-1-1 system, including mandates for technological upgrades, the organization of daily practices is more or less left to individual departments. Formal and informal dispatcher organizations, publications, and professional groups exist and share experiences. Scholarship has the potential to learn from such experiences while informing these experiences with a basis in theory and knowledge. Below is a list of recommendations that emerged based on such a synthesis.

Correcting Dispatch Errors

Errors in data entry are an unavoidable part of routine dispatch practices. While many dispatchers feel personally responsible for such errors, they are a common product of human operations. Furthermore, the speaker is also capable of making mistakes and in more drastic

emergencies is also likely to be under greater pressure. Whether cognitive or typographical, errors can result in the same consequences delaying the delivery of assistance. In worst-case scenarios, they can and have contributed to the death of persons in need of help. Variations between practices and previous linguistic work suggest several approaches that can help reduce or recognize and correct errors.

Frist, when errors occur in the presence of another engaged listener these errors are very likely to be caught. In computer programming a technique known as *pair programming* is sometimes used to reduce errors in the production of new code. One programmer actively writes code while another programmer reviews the code as it is written, and the programmers alternate roles. A fairly robust body of research has confirmed when and why pair programming is both effective and cost effective, and observations in this project also noted a consistent benefit to having two active listeners in a call. In cases where secondary dispatchers listened to ongoing calls they frequently identified data entry errors made by their colleagues, or noticed details that the primary dispatcher overlooked. Secondary dispatchers are not always able to listen to the call that a primary dispatcher is taking, but often their support tasks do not begin until after initial data is collected. Whenever possible this study suggests that a second listener should listen to incoming calls and in high priority cases review the initial entry of data for mistakes.

Even in locations where secondary dispatchers followed incoming calls, they were also frequently occupied by other tasks and in some places only a single dispatcher is on duty during low volume hours. Without much effort the existing arrangement could adapt to provide a second listener when it makes the most impact by prioritizing listening during ongoing and serious emergency calls. In cases when another dispatcher is not present, there are opportunities within the existing call dialogue for key information to be verified. For example, when a

dispatcher requests information and the caller provides it, the dispatcher will repeat the information as a confirmation. Callers can and on several occasions did fail to realize a mistake that the dispatcher made, or be unaware that they made a speaking error. In the absence of a secondary listener for critical calls, a single confirmation may be insufficient to recognize an error, and other confirmations should be integrated into the dispatch dialogue. Dispatchers typically tell the caller when a unit has been dispatched, with statements like "a unit is on the way to you now." At this point in the call the dispatcher has usually moved from the "collection data" portion of the call to portion of the call where they attempt to maintain some control of the scene as units on their way. However in such routine statements are opportunities to repeat the address and provide a second opportunity by including the location again, for example saying "units are on the way to [address]." Double or triple-checking key information during a call gives the caller and call-taker a chance to revisit it in different state of mind and context after the dispatcher has established a calm dialogue.

Information Overload and Waste

Consistently across sites and situations there emerged examples of information overload in dispatch practices, where more information became too much information and inhibited the dispatch process. As a rule, observations suggest that the utility of information is maximized by an efficient presentation of what dispatchers need to know to accomplish their tasks. More information is not always better, and can reach "breaking points" based on the physical parameters of the environment or the dispatcher's ability to track multiple sources of information. For example a unit status list is only useful until there are too many units to be displayed on a single screen, and then unit information may require the dispatcher's active attention to find.

Similarly, the addition of new devices can conflict with existing interfaces or practices. While the core of an emergency call is the conversation between caller and call-taker, dispatchers must also manage that conversation within an increasing network of information connections. Speaking to other dispatchers or accessing other sources of information, visual or textual, draws on the limited resources of dispatcher's attention, focus, and physical ability to manipulate the environment. Resources must be designed and placed for ease of use during the most taxing emergency situation. While dispatch is often treated as an individual task, this project suggests that it is increasingly a group effort and if possible utilities can be delegated across the network of actors responding together to an emergency situation rather than allocated or deployed to every single dispatcher.

Efficient data reduction refers to the consolidation of information without losing any information critical to a task. Principles of data reduction are extant in some parts of the dispatch environment but absent in others. Dispatchers CAD software, for instance, provides some very efficient ways to display information on a monitor that did not usually appear in other dispatch software. Rather than using only text, a unit's status can be color-coded, the unit's line will blink when it has gone too long without communication, and other information may be displayed through symbols next to the unit designation. The attention and focus of a dispatch team is not unlimited, and therefore is effectively a resource that is spent during emergency response. Where a dispatcher looks and how the dispatcher uses his hands to interface with dispatch tools can impact the utility of a tool. Visual information proved to be particularly prone to "data overload" depending on its location and the delegation of tasks associated with its use.

Applications to Visual Technologies

Visual technologies were among the most difficult for dispatch centers to incorporate into routine practices, particularly those that displayed raw visual information. A core role of dispatchers' daily work is to translate raw information into institutional classifications. Visual data often necessarily draws a dispatcher's visual focus as they scan images for features that are relevant to ongoing events. Thus dispatchers cannot look at an image while entering information into the CAD. Those departments that did utilize any kind of visual information often left the task of "looking" to a dispatcher that was not otherwise visually engaged. For example a radio dispatcher can easily scan visual feeds through a security camera while providing visual details to units en route or on the scene. Again, proximally seated dispatch groups working together were much more effective at using visual inputs *during an ongoing call* than individual dispatchers, who were more likely to use these tools between calls.

Rather than placing visual information at each individual desk, such information is easiest for dispatchers to integrate into their practices when it is placed at a different level of the environment. Large central screens or smaller screens placed accessibly between neighboring dispatchers allow viewers to alternate their focus between routine dispatch practices and tasks using the visual field. For example in one case such an arrangement allowed one dispatcher to view an image while describing it to both a dispatcher updating an incident report and a radio dispatcher who was relaying information to units at the scene. As with data entry errors, multiple viewers can catch details in an image or video that other dispatchers miss or focus on different images from the same location.

Although rarely used, tablet computers and smart phones also proved to be extremely easy for dispatchers to use for accessing information on the internet during a call. Dispatchers

used their devices to locate maps or pages associated with locations in an ongoing call and could place the devices in an easy to view location for the duration of the call. In general, observations suggest that having visual data at a different level of engagement, either in personal space or community space, than the primary dispatch interface allows dispatchers to quickly shift their focus between locations associated with different kinds of tasks. While many dispatchers and supervisors questioned how they could effectively allow callers to send images or video to the dispatch center, such an infrastructure already exists for consumer telephones and may be able to be adapted for dispatch use. While administrative attitudes were almost uniformly negative or ambivalent towards the use of personal devices, there were no observed negative consequences of their use and several instances of innovative constructive uses. Although some dispatchers, especially younger dispatchers, used them occasionally for recreation or social purposes, these cases were no more of a "distraction" than any other accepted materials in the dispatch center, from books to knitting to watching a game on the television, which dispatchers use to fill empty time between calls and tasks.

Quantifying the Effective use of Visual Tools

In general there was a universal need to quantify the "effective" use of visual information tools in dispatch routines. While occasionally novel or interesting, the use of visual tools and the outcome of that use were highly contingent on circumstance and individual dispatcher initiative in many cases. While many applications are circumstantial and can vary by the demands of each jurisdiction, some tasks and outcomes were consistent across departments. *Locations tasks* involve deploying visual aids in an attempt to locate a missing or lost caller, police unit, suspect, missing person, or occasional family of ducks. While rarely a dispatcher could directly locate the object of a location search, other outcomes were also beneficial. Narrowing down a field of

search or eliminating possible routes also assist in such searches, and can involve coordinating information from units, callers, and video feeds. *Tactically* dispatchers often have access to visual images or video from perspectives that units on the ground cannot gain. Dispatchers can provide information around terrain, the relative location of units to other features in the environment, and identify routes or paths that might not be easily identified by units at the site.

More generally, observations suggest that effective practice for visual tools can be developed in two reliable ways. First, as a body of experiences grows it becomes easier to identify common elements and outcomes associated with new technologies. Dispatchers and supervisors who collaborated with friends and colleagues in other departments often benefitted from shared experiences of other departments. Departments can face different kinds of daily challenges and sharing experiences lets dispatchers consider situations before faced with them. Second, within departments the use of tools can be tailored to those specific problems and situations that the community faces every day through reflection and review of incidents involving their use. In short for both cases *communication* facilitates the sharing of information and experiences that can inform the application of new tools. Dispatchers often expressed the feeling that changes in their work environments had been decided by a superior or force outside of their control. By engaging actively in dialogues about what new technologies can offer and accomplish, as well as dispatcher concerns, they can shape the spirit and practice of adopting new technological tools. Without an established standard, individual departments must create their own assessments relevant to their communities, and share their assessments with the broader dispatch community to develop a more universal set of standards and evaluation principles.

Justice and Beneficence

Issues of social justice should not be ignored by the public, dispatchers, or scholars interested in the emergency response system. This concern is motivated by the question "which individuals and which interests benefit from these technologies?" Whenever possible, dispatch centers should attempt to provide the maximum benefit to the most number of people under its protection and apply technologies in a way that prevents the greatest harm to the community. For example in one community dispatchers only used cameras to keep an eye on units responding to incidents within their field of view, while in another department similar cameras were also used to look for reported accidents, a missing elderly man, a lost dog and other non-police functions. Seeing and surveillance also brings with it its own set of ethical and moral concerns, and can inform decisions about when and how certain kinds of visual information will be utilized.

On a larger scale, it is also important to maintain awareness of how different interests are prioritized when new technologies are adopted in emergency response. For instance using direct images from an emergency to improve the delivery of medical or rescue services is a topic that has received no attention in FCC releases about upgrading the technological core of the 9-1-1 system. There is an opportunity for other kinds of emergency response professionals from doctors to engineers to see and utilize visual information directly from an emergency. While public and political discourse continue to favor crime as the iconic emergency that shapes the collective imagination, a just application of new technologies must be based on improving the well-being of all emergency callers.

Concluding Remarks – Questions for the Future

What conclusions can we take away from this project and what questions remain for future research? Without a doubt the emergency continues to be "governed through crime" at the level of daily practices and in the adoption of new technologies. However this is not a

deterministic or absolute arrangement, but evinced in the tension, tendency, and discourse that shaped the flow of daily practices. Law enforcements continued ascendance above other emergency services manifests daily as a tension between a call-takers role to provide help and comfort and their role in identifying suspicious or criminal behavior. This tension was frequently palpable in cases where a caller suddenly found that a dispatcher asked unexpected questions that suggested suspicion. Discourse remains a powerful motivator for technological adaptations in many departments. There were several examples of technologies appearing in departments, from dispatchers perspectives, "out of thin air" without a specific purpose or protocols for their use. These devices tend to be deployed towards security and law enforcements ends first, while other applications are often the result of individual dispatcher initiative.

While previous research has regarded dispatchers as individual workers, the dispatch center today is often a dynamic communication hub for multiple forms of communication. Within the center, dispatchers work within a social network that collaborates to achieve effective emergency response. Furthermore, speaking with callers is no longer the "only" means by which emergency call-takers can gain information relevant, nor is audio information the only kind of information that a dispatch team may process during ordinary calls. Consequently, the social organization and informational organization of the dispatch center sometimes interact to facilitate or inhibit emergency response procedures. As new technologies are integrated into emergency response system, both scholars and practitioners must be contextualize their use within this environment.

This project has also touched on a number of topics which warrant further investigation. The 9-1-1 emergency response system is not only shaped by social discourse but also contributes material to it every single day. Furthermore as mobile devices allow callers to reach 9-1-1 from

greater areas, publically released calls bring viewers and listeners closer to people's experiences in tragic and violent events. Meanwhile Pew polls over the past decade have found that the public continues to believe that crime is a worsening problem even while violent crime rates have plummeted. Do media presentations of horrific calls impact public perceptions of violent crime? What are the social politics at work in the release of emergency calls after disasters, school shootings, and other high-profile events?

As a gatekeeping institution, it follows that 9-1-1 legitimizes certain requests for help while denying others. There are entire categories of emergency with their own response networks apart from 9-1-1. Pregnant women, gambling addicts, drug users, and victims of abuse are among the many people in need of help who must seek alternative assistance to avoid having their problems potentially criminalized or brought under the gaze of the law. The assistance of 9-1-1 also ignores ramifications and consequences that follow. South County, for example, has a volunteer program to help people cope with the psychological and practical aftermath of traumatic emergencies and direct them to the appropriate resources. Witnesses, family members, or bystanders may find themselves trying to cope with situations they never anticipated and whose own needs may be entirely ignored by responding institutions. These alternatives and supplements to "9-1-1" for marginalized categories and their co-existence with formal institutional responses has not, to my knowledge, been examined through a sociological lens.

Finally, this study has examined only a narrow range of the visual technologies that are being deployed in policing and emergency response. In some places officers are now wearing cameras during all routine activities, while in others the police monitor civilian internet "streams" as a method of subverting civil unrest. The observations conducted in this study are certainly seated within a wider trend of institutions visually engaging with the outside world. The

politics of literal *seeing* are increasingly germane to the ordering of social institutions as well as the individuals that operate them. Concepts such as "surveillance" lack the nuance to account for the diverse range of visual connections that the ordinary person is subject to, willingly and not, institutional or individual, every single day. I have little doubt that a sociological critique of institutional seeing will emerge as various scholars encounter trends similar to those demonstrated here in the emergency response system.

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Appendix: Lee Loevinger's Imagined Emergency Situation

- Children, or young teenagers, are left alone at home. They hear the noise of a marauder. Are they more likely to know or remember a local 7 digit number, or a well-know, universal, 3 digit number?
- An adult asleep at night in his bedroom hears the sound of someone entering his house. The telephone book is on the first floor, but there is an extension in the bedroom. Is he more likely to know the local 7 digit police number or the universal 911 call? And what are his chances of creeping downstairs to consult the phone book?
- A man is shot, stabbed, or otherwise wounded in a holdup. He staggers to an outside telephone booth. Does he call police or an ambulance? What are the numbers, and how does he find them before he passes out?
- Some 7% of the total population is estimated to be functionally illiterate, and this proprotion (sic) is much higher (probably exceeding 20%) in poor or slum areas, where a large proportion of crime is committed. What do the illiterate, and semi-literate, and those unaccustomed to careful reading of such things as telephone books or complicated lists of emergency numbers (like the attached), do in an emergency? (They can dial 911 on the basis of position of the dial holes or buttons.)
- Many people, some elderly and some young, have difficulty reading without glasses or in poor light. What do they do if they must make an emergency call and have lost or broke their glasses?
- A normal person suddenly confronted with danger (riot, fire, mob) or need to help another (a dead or wounded person, an observed holdup or beating) panics and finds himself unable to thumb his way through a book or consult the list of emergency numbers he has carefully folded and carried in his pocket.
- Many emergencies involve situations where even access to a list of emergency numbers is not helpful or informative. Suppose a member of the family starts to close severely to the point of losing breath? Suppose there is coma from an unknown cause? Suppose a child is in a perilous position, such as on a rooftop or high in a tree, with a heavy wind? What agency is called in any of these circumstances?
- A citizen observes a small gang of teenagers smashing a window, hitting an old man and starting a fire? Does he call the police, ambulance or the fire department?
- A citizen observes a boat or a raft in trouble on a river, or a boy clinging to a rock in the middle of a river, what agency should be called?
- Someone rescues an apparent drowning victim or other person needing a pulmotor. Whom do you call for the pulmotor squad?
- You are involved in, or observe, an automobile accident in which there is a hit-run driver, serious personal, injuries and a fire beginning in the damaged car. Whom do you call?