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The discourse of distress: a narrative analysis of emergency calls to 911

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OPERATOR:	Go ahead
DISPATCHER:	Lexington Fire Emergency
CALLER:	[Barely audible, gasping for breath] 12 Ridge Road Lexington. Help me. I've been stabbed.
DISPATCHER:	Ma'am. Ma'am.
CALLER:	[Gasps of breath].
OPERATOR:	Did you get the address?
DISPATCHER:	I did not.
OPERATOR:	The woman was stabbed. Wait a minute. [Clicking of computer keys can be heard].
DISPATCHER:	Ma'am. Ma'am. [No answer. Hangs up].

The above is a recreation of an actual emergency call placed by K.D. Dempsey at 5:30 a.m., 23 August, 1992, in Lexington, MA. The dispatcher dismissed the call as a hoax, a decision that many in the community believe cost the woman her life. No one responded to the very real stabbing for over 5 h. Such an egregious failure to respond to a call for help brings to mind the 1964 case of Kitty Genovese, a young woman who was murdered outside her home in New York City over a half hour time span, witnessed by nearly 40 neighbors. Coverage of that case always concluded with astonishment that no one came to her aid, *nor even called the police* (Rosenthal, 1964). As the above interchange demonstrates, calls to the authorities do not necessarily result in timely aid.

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In trying to explain the lack of response from Genovese's neighbors, social psychologists undertook a large number of experiments on the circumstances that promote or inhibit bystander intervention (Darley and Latane, 1968; Latane and Darley, 1968; 1970). In general, they concluded that whether or not help was proffered by witnesses depended on the following: (1) definition of the situation as an emergency (crowds often engage in a state of pluralistic ignorance of emergency signals), (2) diffusion of responsibility (the more people witnessing an event, the *less* likely anyone is to help), (3) the role of helping models (as one person moves to help, others may follow), and (4) the role of information (training people improves the likelihood of future responsiveness) (e.g. see Atkinson et al., 1983). According to these predictive criteria, the Dempsey emergency situation should have brought aid. In other words, the dispatcher should have responded with help immediately because (1) stabbing is a clear medical and police emergency, (2) the dispatcher was clearly the only person responsible for dispensing aid; at the time the call came in, he was the only person on the floor of the dispatch room, (3) the telephone operator who transferred the call to the dispatcher was clearly serving as a helping model, and (4) the dispatcher had been specifically trained to handle emergencies. It appears that existing social psychological approaches cannot explain the critical failure presented at the outset of this paper.

If this approach cannot account for the Dempsey case, perhaps discourse analysis can, which is the approach we attempt in this paper. The use of narrative analysis places our study within a growing trend that accounts for interactions in everyday settings using discourse approaches (e.g. Drew and Heritage, 1992; Zimmerman, 1992a; Tracy and Tracy, 1998). The main purpose of this paper is to utilize the special circumstances of 911 emergency calls to investigate the barest essentials of narrative communication itself. In the current study, we treat the Dempsey case as a lethal breakdown in communication, and attempt to describe ways in which communication about emergency situations proceeds in other calls to the 911 system. In order to accomplish this goal, we identify the discourse strategies (e.g. narrated events, conversational requests) employed by callers to elicit help from dispatchers and determine whether narrative descriptions told under these special circumstances fully resemble those told under non-emergency circumstances (i.e. whether they provide orientation information or evaluation of the nature of the events, etc.).

The literature aimed at promoting communication between emergency call systems operators and/or dispatchers[1] and the citizens who place calls for assistance recommends what interactions an operator or dispatcher must avoid and what he or she should try to enhance. For example, they are advised to avoid interrupting the caller so that the need to ask unnecessary questions is eliminated, to give explanations of the actions/decisions they make, to ask clarifying questions, to limit their own

[1] In the 911 systems of some communities the functions of emergency call operator and dispatcher of assistance are performed by the same individual, in others, the two functions are divided between two or even more individuals (Leonard, 1970). The 911 system that we discuss later in this paper combined the role of telephone operator and dispatcher and we refer to individuals who field emergency calls and dispatch aid as the dispatcher throughout this paper unless we are referring to a specific study that maintained distinctions between these personnel.

talking, and to provide interjections to let the caller know he or she is being listened to attentively (Banks and Romano, 1982; Lanese et al., 1977). Elsewhere, scholars of police communication systems have provided training programs that emphasize appropriate use of voice and diction (e.g. loudness, tone, pitch, rate of speaking, articulation and pronunciation), and in contrast to Banks and Romano (1982) have suggested techniques of directive interviewing, eliciting information using closed questions (e.g. yes/no questions) which allow the dispatcher to have a high degree of control over the type of information elicited (Zannes, 1976).

The guidelines and training programs for servicing 911 calls largely represent the ideals of how communication between emergency dispatchers and callers should proceed. However, in an ethnographic study of communication within a Midwestern Police Department, Manning (1988) found police emergency system operators to respond to emergency calls with varying degrees of success. Manning estimated that 60% of calls were "lost" or screened out by the operators or the dispatching process. For example, calls could be lost because the caller refused to give information about the location of an incident. This was felt to be evidence that the call could not be trusted to be a genuine request for assistance.

1. Narrative discourse

The operators in the Midwestern Police Department described by Manning (1988) were under much stress to reduce the number of valid incidents because of the scarcity of resources and the high demand for police and emergency assistance. The operators were trained to elicit information in a format that was dictated by the computer system they utilized. An incident could not be electronically sent on to a dispatcher until the operator had elicited the location of the incident. Manning reports that the operators often found this to be at odds with what callers most wanted to communicate which was describing *what* their emergency was about. This suggests that callers may be inclined to narrate the events of their emergency rather than wait to respond to a dispatcher's questions.

In its sequencing of successive past events, a call to the dispatch room appears to fall within the definition of narrative commonly articulated by linguists, psychologists and others working in the field of narrative (e.g. Labov, 1972; Van Dijk and Kintsch, 1983; Bamberg, 1987; Gergen,1988; McCabe and Peterson, 1991; Berman and Slobin, 1994). The communicative intent of an emergency call is not to tell a developed story about one's recent personal experience, but to elicit a response (e.g. the immediate dispatch of a police unit). However, this is probably also true of personal narratives; that is, we use personal narratives in our everyday lives to elicit many different kinds of responses (e.g. to warn, to persuade, to make people feel connected to our experiences). In this sense then, personal narratives are fundamentally interactive, and emergency calls that report past events may function like other forms of narrative discourse.

The unique contribution of an analysis of emergency calls to the field of narrative is in the insights it can offer about the bare essentials of narrative structure. The

circumstances under which all emergency calls are presumably initiated makes vital the ability to tell a brief yet effective narrative. In as few words as possible, callers must convey the nature of their emergency so that the dispatcher can relay their need for assistance to the appropriate emergency services. This necessitates omission of many background details such as what a person was wearing, thinking, etc., that are not vital to obtaining assistance but that might make a compelling recount to friends at some later point or may prove necessary in court if criminal proceedings are involved.

Circumstances require that callers give clear information about their emergency — who is in need of assistance, their current location and the nature of their emergency so the type of assistance they may need, such as an ambulance or a fire truck can be easily determined. This is a decontextualized language task for both the caller and the listener. The caller cannot assume shared background and geographical information with the dispatcher. Giving the *who* and *where* are key components of a classic narrative, serving to give orientation information to the listener (Labov, 1972; McCabe and Peterson, 1991). However, the emergency call may differ from a classic narrative in that the *when* of their story can be presumed to be now (or the immediate past). *What* is involved will obviously be important for the dispatcher to make the right selection in terms of assistance and this corresponds to the complicating action provided in a classic narrative, although the level of elaboration about events will likely be less in a 911 emergency call than in a classic narrative about a non-emergency situation. The evaluative component of classic narrative structure is not expected to be present in a 911 emergency call. That is, the *how* and the *why* are irrelevant for the task of assisting with the emergency, although Banks and Romano (1982) advise operators or dispatchers to ask when and how an incident occurred to help in identifying relevant details, especially for follow-up in any subsequent criminal proceedings.

2. Conversational discourse

One may argue that emergency calls are not narrative in nature, rather they comprise other forms of discourse. Presumably, they even belong to a fairly routinized form of discourse. That is, members of a modern society generally know the basic script of an emergency call (from television, movies, public service programs in school), although this script is almost never derived from their own experience for few individuals have ever placed an emergency call. Moreover, Zimmerman (1984) points out that placing an emergency call appears to belong to a class of telephone interaction termed 'service calls' which is presumably a familiar class of telephone interaction for most individuals.

Gricean maxims of conversation would have us predict that the caller will provide only truthful and relevant information in as clear a manner as possible (Grice, 1975). Similarly the dispatcher is expected to elicit only relevant information and to do so in the most clear and efficient manner. A non-response on the part of the listener is likely to violate the speaker's expectation of a response (Schegloff and Sacks, 1973), the result being that speakers may repeat their turn, expand it in the anticipation

that this will prompt a response, or they may explicitly demand a response from the listener. Another important feature of conversation is the backchannel (e.g. "huh-huh" uttered by a dispatcher during a pause in a caller's description of an emergency situation). Backchannels can be used in service of a variety of conversational functions. They can be used to signal attentive listening, to signal that the speaker should continue his or her turn (Schegloff, 1993), or to signal confirmation or disconfirmation of information.

Studies of referential communication have explored some issues relevant to failure of communication. In this paradigm, subjects are asked to select and describe one object among a set of similar objects such that another person on the other side of a screen can accurately select the same object (e.g. Robinson, 1981). Whitehurst and Sonnenschein (1978) have identified a developmental trend that begins with being unable to give complete identification of objects to then being able to provide redundant information to finally being able to give only the necessary critical information. One of the characteristics emphasized in recent studies of referential communication is the interactive nature of tasks presented to participants. The meaning conveyed in communication is negotiated among the speakers; all participants primarily employ strategies that are contingent on the verbal behavior of others (e.g. Lloyd, 1991). This literature can offer insights on the strategies that individuals can adopt once an initial communicative attempt has met with no response or a failure to comply on the part of the listener. The functions of specific adaptive strategies employed by speakers can be identified. For example, whether a strategy adopted simplifies the initial exchange, provides additional information, justifies a request for action, etc. (Guralnick and Paul-Brown, 1984). Relevant for the current study is the notion of specific adaptive strategies that callers can resort to once the initial communication of their need has been made and the dispatcher has not immediately complied with assistance. The dispatcher may, for example, have responded with an elicitation of further information, or with a simple acknowledgment that they heard the caller, requiring the caller to adopt a contingent strategy to garner assistance.

The conversation that takes place during a call for assistance is primarily an exchange of information. The structure of this exchange has been identified as routinely comprising five main constituents: (1) an opening sequence, (2) a request sequence in which the caller tells the dispatcher some basic information about what happened to prompt the call and may ask for a specific type of aid (e.g. an ambulance), (3) the dispatcher may then elicit further information if necessary, (4) the dispatcher may then offer a response to the emergency (e.g. that a police car will be dispatched to the scene of a crime) and (5) the dispatcher closes the exchange often with assurances that help is on the way (Zimmerman, 1984, 1992a,b; Whalen and Zimmerman, 1987). The current study enables us to determine the nature of the discourse that takes place in the request sequence, namely whether the conversation largely comprises direct demands or requests for assistance, or whether the caller gives a narrative description of events.

In the next section we (1) identify the discourse strategies employed by callers to elicit help from dispatchers, and (2) determine whether narrative descriptions told under these circumstances fully resemble those told under non-emergency circumstances.

3. Method

3.1. The data

All calls to the emergency dispatch room of a town of 44,000 situated within a large Northeastern metropolitan area during a 48 h period were copied from master tapes housed in the local Police Department using audio tape. The town was contiguous with neighboring towns and cities that comprised an urban conurbation of approximately 3.3 million people. The town was predominantly a working class and lower-middle class residential neighbourhood of the major city in the conurbation. A large commercial street linking the downtown areas of the major city and other neighboring towns passed through the center of the town, and was a major artery for bus routes and commuter traffic. As the life of the town stretched primarily along the length of this main street, several callers made reference to the street, proximal cross streets, and major landmarks on the street to provide detail about their locations.

All emergency calls from the town came into the dispatch room, including requests for fire, police and emergency medical assistance. The town had enhanced 911 provided by the regional telephone company. This system allows dispatchers to locate the registered address associated with a telephone number in almost all instances, although the stated policy of the dispatch room was to verify all addresses regardless of the automated retrieval capability.

Calls were selected for analysis on the basis of the following criteria: (1) a call was interpreted as a genuine emergency by the dispatcher and not rerouted to a non-emergency line (four calls were rejected on this criteria, e.g. calls reporting stray dogs, towed cars, etc., were not responded to as emergencies by the dispatcher), (2) the caller did not hang up without speaking nor claim that they had the wrong number (four callers hung up on the dispatcher without speaking; callbacks to these telephone numbers, which where available electronically, were required of the dispatcher, and resulted in callers informing the dispatcher that all was well; two callers claimed they had the wrong number when the dispatcher identified the line as emergency 911; these six calls were excluded), and (3) the call was not placed by a medical professional or paraprofessional (one call was placed by a protective services agent from a home for the elderly and was therefore excluded). These criteria were met by 26 of the 37 calls and form the corpus of data for this study. All data were transcribed using conventions based on CHAT (Codes for Human Analysis of Transcripts; MacWhinney, 1991) that enable the transcriber to reflect overlapping speech, interruptions, nonresponse and other features of natural language.[2]

[2] The CHAT conventions used in this study are as follows: < > speech within angled brackets denotes scope of speech affected by a following code enclosed in square brackets; these codes were: [>] overlapping speech follows; [<] overlapping speech precedes; [//] retrace with correction; [/] retrace without correction. Other codes mark utterance termination and intelligibility: +/. interruption; +... incompletion; xx unintelligible word; xxx unintelligible utterance.

A small number of separate calls described the same events. For example, several different callers telephoned the emergency dispatch room to report the same car crash or the same street fight. These calls were all retained for analysis, because the dispatchers were trained to not initially assume they knew the details of the emergency in order to establish that the caller was not reporting an additional car accident or street fight elsewhere in the town.

3.2. Coding

The coding procedures were developed inductively from the data, from insights gained from coding schema of discourse strategies developed elsewhere (Guralnick and Paul-Brown, 1984; Lloyd, 1991), and from reading analyses of other authentic emergency calls presented in the literature on police communications (e.g. Zannes, 1976; Manning, 1988).[3] The coding procedures allow for two types of analyses of distress communication: (1) identifying and quantifying the discourse strategies callers use to convey information to the dispatcher, (2) identifying and quantifying the type of information that is exchanged or elicited (for example, the who and the what involved in an emergency).

3.2.1. Discourse strategy coding

Coding was divided into initial discourse strategies and subsequent discourse strategies. The unit of analysis for coding discourse strategies was at the level of the speech act. A speech act is a segment of speech that conveys pragmatic intent, that is an utterance or series of utterances that collectively communicate a particular intent such as promising, threatening, agreeing etc (Searle, 1976). Speech acts were categorized to be largely within either a conversational (dialogic) or narrative (monologic) mode of discourse. For example, a caller may elicit help with a requesting speech act which is in the conversation mode of discourse (e.g. *Can you send an ambulance immediately?*). Alternatively, a caller may use speech acts that are descriptions of the emergency which is in a narrative mode of discourse (e.g. *My husband got up this morning and he couldn't stand up and he can't breath now*). Callers may even combine requests and descriptions — thus two different modes of discourse can occur within the same speaker turn. Ritual openings such as *This is 911. What is your emergency?,* as well as ritual closings such as *Thanks* were excluded from analysis [see Zimmerman (1992b) for discussion of openings in emergency calls]. Formal structures such as questions, declarative sentences, etc., do not determine the type of speech act, for example, a request made in the conversational mode may take the form of either a question (e.g. *Can I have an ambulance?*), or a declarative statement (e.g. *I need an ambulance*). (See below for level of reliability on segmenting the discourse into modes of discourse at the speech act level).

3.2.2. Initial strategies

This level of coding identifies the initial strategies employed by the caller for obtaining emergency assistance, as well as identifying the initial response provided

[3] Also see Zimmerman (1992b) for a conversation analysis coding scheme.

by the dispatcher receiving the call. A caller's initial discourse strategy for obtaining assistance from the emergency dispatch room consists of one of three mutually exclusive speech acts: **request** for help and **demand** for help both within a conversational discourse mode and a **description** that tells of the events of the emergency situation within a narrative mode (see Appendix A for examples taken from the data of these and all subsequent coding categories). Initial dispatcher responses to caller strategies can be one of four mutually exclusive speech acts: a verbal **compliance** to the caller's stated needs, an **acknowledgment/confirmation** of information received, the **elicitation** of further information, or **no response**. Interruptions of a speaker's turn were also coded. For example the dispatcher may have begun to elicit further information when the caller cuts him off. In such cases the response is double coded for type of speech act (i.e. elicitation) and the presence of an interruption. When a speaker's turn is interrupted and the type of speech act can not be categorized only the interruption is coded.

3.2.3. Subsequent adaptive strategies

If the caller's initial strategy for obtaining assistance is met with immediate success (i.e. the dispatcher complies with emergency assistance after the first caller turn) — no further coding is necessary. However, emergency calls of simply one turn per caller and dispatcher are exceptional. Most initial dispatcher feedback consists of either acknowledgment/confirmation or elicitation. Thus the caller is most often required to take a second (if not several subsequent) turn(s). The caller is required to adapt his/her call for assistance contingent on the dispatcher's prior response. For instance, the dispatcher may simply repeat the caller's previous turn in order to confirm that they heard the caller correctly. The caller's subsequent speech act therefore requires that they either **confirm** or **negate** the dispatcher's feedback. Nine mutually exclusive speech acts that serve as adaptive strategies can be identified; **Repetition of a previous turn, Simplification of a previous turn, Addition of information (elicited by dispatcher), Addition of information (unelicited by dispatcher), Question dispatcher, Acknowledgment/confirmation of previous speaker's turn, Negation of previous speaker's turn, Justification of the call** and **Other** that includes infrequently used adaptive strategies (i.e. admonishment of the dispatcher and no response). The dispatcher's response to each successive speech act of the caller is coded in the same manner as for initial response speech acts with the additional category of **Other** that includes infrequent speech acts (i.e. give advice to, comfort, or admonish the caller).

3.2.4. Provision of information coding

The caller's initial and subsequent demands, requests or descriptions were coded for provision of the following information: **who** they are and/or who is in need of assistance, **where** they are located, **what** the nature of their emergency is, **when** the emergency occurred, **why** the emergency occurred, or **how** the emergency happened. Dispatcher responses were also coded for inclusion of who, where, etc. (e.g. dispatcher may confirm the caller's provision of who and where, or ask for information about what the emergency involves).

3.3. Reliability

Reliability was expressed as simple agreement between two coders (the total number of agreements divided by the total number of agreements and disagreements) and by Cohen's kappa that takes account of chance agreement. Reliability was estimated for detecting the number and types of speech acts in each speaker turn. Simple agreement for detecting the number of speech acts per speaker turn was calculated on 19% (five transcripts) of the data and was 93% (kappa 0.73, a substantial amount of agreement according to the guidelines in Landis and Koch, 1977). Agreement on identification of speech acts in initial strategies was calculated on 23% of the data (six transcripts) and was 86 and 100% for caller and dispatcher strategies respectively (kappa 0.79 and 1.0, respectively). Agreement on identification of speech acts used in subsequent adaptive strategies was 100 and 93% for caller and dispatcher strategies respectively (kappa 1.0 and 0.90, respectively).

4. Results and discussion

4.1. Initial discourse strategies

Fig. 1 shows the percentage of initial caller strategies and dispatcher responses by discourse mode. The most common initial caller strategy was to provide descriptive

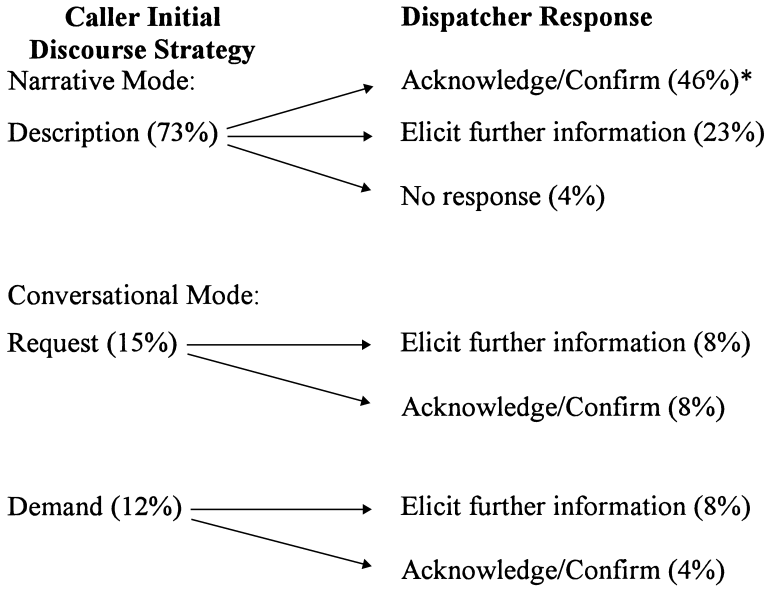

Fig. 1. Percentage of initial caller strategies and dispatcher response by discourse mode and speech act category. *Two calls were completed with dispatcher signaling emergency aid after just one exchange. Both of these calls were initiated with caller **description** of the emergency followed by dispatcher **acknowledgment/confirmation**.

information about the emergency situation. Nineteen of the calls (73%) used a short narrative of events as an initial discourse strategy. This can be illustrated with the following from a caller who, after identifying herself in the opening, provides a description of recent events for the dispatcher:

Dispatcher:	911 This call's recorded. What is your emergency?
Caller:	This is Penny B. from the St. Peter School?
Dispatcher:	Yes.
Caller:	We had a student who ran from our program. And um she's down Maple Street and she's threatening people with a rolling pin right now +/.

Four calls (15%) used a request as the initial strategy for eliciting aid as in the following example:

Dispatcher:	911. This call's recorded. What's your emergency?
Caller:	Yes. I need [/] I need to go to the hospital.

Just three calls (12%) demanded help from the dispatcher, as with the caller in the following example, who incidentally interrupts not only the dispatcher's opening but also his initial response:

Dispatcher:	911. Your call +/.
Caller:	Oh please emergency. 12 Greene Acre Street. Right away!
Dispatcher:	What's the pro +/.
Caller:	Hurry up, please sir.

It is feasible that callers who open with a narrative mode of discourse do so because they interpret the task of eliciting help as informing the dispatcher of the circumstances for the call so that the dispatcher can take the initiative about what to do next (i.e. ask questions to garner more information, tell the caller to stay put, tell the caller how to assist a victim, etc.). We turn now to how a dispatcher responds when confronted with either a narrative description of events or the request or demand for help from a caller.

4.2. Interaction patterns between caller initial strategies and dispatcher responses

The most common pattern of initial caller/dispatcher interaction was a description of events responded to with acknowledgment or confirmation. Twelve (46%) calls began with this combination of exchange (see Fig. 1). The acknowledgment (*huhhuh, yeah*) may work as a backchannel to convey attention, or it may serve as a 'continuer' (Schegloff, 1993), a discourse marker that signals the dispatcher's belief that the caller's turn or "unit" of discourse is as yet incomplete. Repetition of the caller's utterance is not necessarily a backchannel in the traditional discourse sense of showing close attention or getting the speaker to continue, but a form of confirmation

or disconfirmation that the description heard was correctly comprehended. Two of the 12 initial dispatcher acknowledgments/confirmations to descriptive information were immediately followed by the dispatcher signaling compliance without the caller having to attempt a further act. One of the two calls reports an emergency that had already been reported to the dispatcher and therefore the low number of turns to reach the point of signaling compliance may be related to the fact that the caller is not reporting novel information to the dispatcher. The following is from the second call in a sequence of three to report the same heart attack incident:

Dispatcher:	911. Your call's recorded. What's your emergency?
Caller:	Eh. Yeah! I'm not sure exactly what it is. The neighbor down stairs thinks the old man had a heart attack.
Dispatcher:	Yeah! We're on the way...'

One of the 12 description–acknowledgment/confirmation combinations was further accompanied by the dispatcher's elicitation of additional information before the caller took another turn. In fact, the second most frequent dispatcher response to the callers' descriptive initiations was to immediately elicit further information about the emergency. Six (23%) dispatcher responses to descriptive initiations fell into the elicitation category, for instance, eliciting further general information (e.g. *What's the problem*?) or answers to specific follow-up questions (e.g. *Is he breathing*?).

Two calls initiated with a request from the callers and two calls initiated with a demand from the callers were not combined with additional descriptive information in the callers' first turn. Each of these four calls was responded to with elicitation for more information by the dispatcher suggesting that a demand or request (for an ambulance, for instance) did not result in immediate dispatcher compliance. Rather the dispatcher asked for further information to determine whether in fact the emergency was best responded to with the demanded or requested rescue service. For example, in the following extract, the caller merely demands rescue services and gives her address and no other information. After asking for a repeat of the apartment number, the dispatcher elicits information about the nature of the emergency, something the caller has omitted entirely from her initial strategy:

Caller:	Rescue. 931 Midland. Apartment 502.
Dispatcher:	Apartment what?
Caller:	502.
Dispatcher:	For what?
Caller:	[No response].
Dispatcher:	For < what > [>]?
Caller:	< Breathing > [<] problem.

The three remaining calls that used either a demand or request in their initial strategies all did so in combination with a description of events which was met with acknowledgment/confirmation from the dispatcher. In addition, the calls that made

requests in conjunction with descriptive material received both acknowledgment/confirmation and elicitation of further information from the dispatcher, as in the following example:

Dispatcher:	911. This line's recorded. What's your emergency?
Caller:	Yes. Um, can you please send an ambulance to 116 Fulton Street. I have an elderly woman who <can't> [/] can't catch her breath. She's had cardiac surgery.
Dispatcher:	Alright. Is she conscious?

The only call that met with no initial dispatcher response in fact used a description to elicit help. After a pause, the caller makes a second bid to elicit a response from the dispatcher by providing further description.

4.2.1. Subsequent caller and dispatcher strategies

Given that only two calls had the dispatcher signal compliance after the callers' initial bid for help, the vast majority of calls required callers to adopt specific adaptive strategies to further convey their emergency needs to the dispatcher.[4] When the caller's initial description was followed by dispatcher acknowledgment/confirmation, the most common subsequent adaptive strategy for the caller was to continue with unelicited information about the emergency (six of 12 such calls). The dispatchers' subsequent response in these cases was to elicit specific information and/or ask confirmation questions about the volunteered information. In one instance, after this pattern of exchange had continued for 13 acts, the caller, a victim of alleged domestic violence, replies with her address (having already volunteered it once and confirmed it one other time) and switches to a justification for her call that may be one strategy to prompt compliance from the dispatcher:

Dispatcher:	Alright. What address are you at?
Caller:	I'm at 18 Kay. <If you come >[//] first floor. If you come here right now you can see what he did to my door. And I'm afraid for my life and I need help.
Dispatcher:	We'll send someone down there.

Other subsequent adaptive strategies after initial caller description–dispatcher acknowledgment/confirmation included the caller giving confirmation of their initial description before answering questions eliciting further information. When initial caller description was followed by dispatcher elicitation, the most common caller adaptive strategy was to respond with answers to a series of dispatcher questions about details of the emergency. Five of six such initial interactions adopted this subsequent discourse pattern.

[4] The total number of caller and dispatcher speech acts in an emergency call ranged from as few as three to as many as 47. The mean number of speech acts per call was 15. The median number of acts however suggests that at least fifty percent of the calls were being completed in ten acts.

The three caller initial requests responded to by dispatcher elicitation all continued with callers responding with requested information about their emergencies. One caller request that was responded to by dispatcher acknowledgment and elicitation in the same turn also continued with a series of replies to further dispatcher elicitation. Each of the three calls that began with caller demand strategies took on a unique discourse pattern. The demand that had been responded to with dispatcher acknowledgment/confirmation continued with the caller confirming the dispatcher' query about the location of a reported street fight. Of the two calls that had been responded to by dispatcher elicitation of further information, one call continued with the caller answering questions for further information, whereas the other call continued with the caller restating her initial demand and giving unelicited information that prompted the dispatcher to acknowledge her demand, but also to admonish her, telling her to '*Calm right down*', before he signaled compliance.

4.2.2. The communicative essentials of 911 discourse

The bulk of the information conveyed in the emergency calls pertained to where the emergency was located. Of the 269 speech acts that conveyed or requested information about who, where, what, when, why or how, 106 (39%) of them concerned details about the location of the emergency, or where the callers could be contacted by phone. Most of the dialogue involving issues of location took place in subsequent acts rather than in the initial acts of the caller and dispatcher, and was found more often in the callers' acts than in the dispatchers' acts, although elicitation about where an emergency had taken place was the most common of all dispatcher questions concerning the details of an emergency situation.

Detail about the nature of the emergency — *what* the emergency involved — was the most frequently stated piece of information in initial caller strategies, which is consistent with Manning's (1988) report of caller preference to talk about the nature of the emergency incident, although in the current study information about what happened only accounted for 79 (29%) acts overall and occurred most commonly in subsequent adaptive strategies made by callers rather than in initial ones.

Who was involved in the emergency and/or who was placing the emergency call accounted for 76 (28%) of acts concerning the exchange of information. Again the callers' speech acts accounted for the largest portion of these. In fact during initial strategies the dispatchers were responsible for mentioning or eliciting information about who was involved in the emergency on just two occasions.

Just four (1%) acts giving or eliciting information were concerned with when the emergency had occurred. For example, in the following excerpt the caller is reporting the sighting of a prowler by her neighbor and the dispatcher attempts to establish whether this situation is still on-going:

Caller:	She's directly across from me and she said he walks and looks in the window next to my driveway.
Dispatcher:	He's there now?
Caller:	She said he got out of his car and walked around to the front of my house just a minute ago. She just called me and she said she's been watching him.

In all other calls the timing of the emergency is never explicitly mentioned by the callers nor elicited by the dispatcher. The caller and dispatcher are likely to be assuming that the emergency is happening or has happened in the immediate past and therefore does not need to be explicitly addressed as we predicted at the start of the study and contrary to the suggested need for timing information by Banks and Romano (1982). Why an emergency situation had arisen was mentioned only once in the entire corpus. The dispatcher in his initial response to a mother reporting that her son had run away asks if the mother and her son had experienced '*a problem*,' presumably establishing if anything earlier in the evening had prompted the son to run away from home.

Three subsequent adaptive strategies by callers provided information about how an emergency came about. For example, the mother of the runaway boy responded to the dispatcher's question of why her son ran away with a long narrative about a fight between herself and her son. In the following two excerpts from another call, the caller provides information about how he came to be lost on the roadside after trying to take a taxi ride in the near by city of Seaforth:

Caller:	... I'm out here and I have no idea where the hell I'm at. I had a cab driver tried taking me for a long ride around. I got his cab number +...
Dispatcher:	Okay.

(Later in transcript)

Caller:	I got him in um, um over in Seaforth.
Dispatcher:	Okay.
Caller:	He knew where I was going. <I> [/] <I ask> [//] I just wanted to get down the street to Main Square and I ended up way the hell over here.
Dispatcher:	What? Main Square in Seaforth?
Caller:	Yeah!
Dispatcher:	And you wound up in Fieldsends?
Caller:	Yeah! xxx. I tell you I'm armed. I'm a foreign police officer and I am in the military. If you pull this one over or I'll kill you [laugh]. [reporting speech to taxi driver].
Dispatcher:	Okay.
Caller:	Well he pulled it over. Yeah!
Dispatcher:	You want to see an officer?
Caller:	I asked the cab driver to pull over to the police officers but he wouldn't do it. [laugh].

Why and *how* an emergency happened may be important details later, for instance in giving a police statement on a car crash, or telling the story of an emergency situation to a friend. *Why* might even be important for establishing a motive in any criminal investigation that might ensue from an emergency incident (Banks and Romano, 1982). However, for the purposes of obtaining help from an emergency services

official *why* and *how* are irrelevant and as predicted are rare. The caller and dispatcher are almost exclusively concerned with information about *where*, then to a lesser degree about *what* and *who*. The location of the incident was literally the key detail elicited from callers by operators in Manning's (1988) study. Operators were instructed to open calls with a request for information about where the emergency incident was located. Without this piece of information, emergency calls could not be entered into the computer system. While the dispatchers in the current study were trained to open calls with the question "What is your emergency?" rather than "Where is your emergency?" information about the location of a call was the most prevalent piece of information exchanged in the calls and the one most sought by dispatchers after the callers' initial description, request or demand failed to provide this information.

4.2.3. Are emergency calls to the 911 system narratives?

In Fig. 1 we saw that almost three quarters of all speech acts employed by callers in initial strategies were in fact descriptions of the emergency events. Moreover, in the analysis of the kinds of information exchanged in emergency calls we found that callers talked about the who, where and what of their emergencies. However, unlike the non-emergency narratives told by adults in middle-class US culture, the narrated events of an emergency call are almost exclusively limited to provision of orientation information and information on complicating actions that tell of the nature of the emergency. The classic narrative is comprised of key components that include orientation and complicating actions, as well as evaluation and resolution of events (e.g. Labov, 1972), whereas in the discourse of emergency calls evaluative components are presumably irrelevant for obtaining immediate assistance and a resolution is obviously yet to happen. This is not to say that emergency calls are not narrative for they clearly do share key components with the typical narrative genre. However, the descriptions of events in an emergency call are constrained by their dual functions of maximizing the speedy transfer of vital information while minimizing the inclusion of superfluous detail. It is this trade off between concerns such as efficiency and the urge to narrate human experience that may contribute to an inherent communicative tension in placing a 911 call.

5. Conclusion

A narrative mode of discourse requires the conveyance of expected types of information about characters and events within an expected format that may not intrinsically lend itself to getting emergency help. However, many calls included a description of the situation. This consists of clear information as to where the emergency is taking place and to a lesser degree what the nature of the emergency is and who is involved. This type of call is accompanied by the dispatcher opening with a general prompt for information about what happened which allows the caller to describe one or two key events of the emergency incident. The dispatcher then most commonly responds with a question and answer format to elicit key details such as the location of the emergency and possibly who is involved and what more can be

added about the nature of the incident. In other words, many calls found in this corpus actually lay somewhere between the ideal dispatcher guidelines outlined by Banks and Romero (1982) in which the caller is allowed to talk without interruption, and the pragmatism of the over-burdened and rigid 911 system of the Midwestern Police Department described by Manning (1988), which requires the operator to elicit crucial information about the location of an emergency and virtually ignore information about who and what was involved and when, how or why the incident arose. While evaluation and elaborated events may be characteristic of classic narrative (Labov, 1972), the presence of these features in emergency calls required the dispatchers to reverify details on a case by case basis or else to elicit the most critically relevant information, such as where the emergency was located and what and who the emergency involved.

It is plausible that the nature of the emergency may affect the chosen mode of discourse. An emergency that unambiguously requires medical assistance may pull for a request or demand for an ambulance as an initial strategy rather than for a narrative about how one came to need medical assistance. A quantitative investigation of this interaction between the nature of the emergency and the chosen discourse strategy must await further study, but it is telling that among the calls studied here emergencies of the same type (e.g. breathing problems) could result in callers using either narrative or conversational modes of discourse.

At the start of this paper we suggested that traditional social psychology failed to predict the breakdown in communication between caller and dispatcher in the Dempsey case. In addition, the dispatcher's record of successfully dispatching assistance prior to Dempsey's call for assistance (including sending assistance to a car crash earlier the same night) would suggest that his failure to respond appropriately to her call was not due to a lack of aptitude. This leaves unresolved the failure to communicate the emergency in this particular call. From this study of the discourse strategies of callers we highlight the tension that exists between the need to convey an emergency and the selective use of narrative components. K.D. Dempsey's initial strategy combines a description of her location with a non-specific request for assistance, immediately followed by further description of her situation ("*I've been stabbed*"). She supplied information about where the emergency is located, who is involved and what had happened to her. However, the density of the information in this terse description of her situation may have made it difficult for the dispatcher to immediately process the call, and presumably Dempsey's desperate condition provided the dispatcher with little time to pursue the subsequent adaptive responses we saw used in other calls to verify descriptions likely vital for responding to calls.

We conclude that (1) despite the seemingly important need for brevity the most frequent discourse strategy employed by callers was a description of events as opposed to immediate demands or requests for help, (2) these descriptions were pared down to those components of narrative that provided information on the who, where and what of the emergency rather than the why or how, and (3) that this modification of the classic narrative structure to so sparse a format shows a sensitivity to the dispatcher's needs and to the relevance of certain types of information in an emergency situation.

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Appendix: 911 Discourse coding scheme

A.1. Level one: caller/dispatcher initial discourse strategies

This first level of coding identifies the initial discourse strategies employed by the caller for obtaining emergency assistance, as well as identifying the initial response provided by the dispatcher receiving the call. The unit of analysis is the speech act. Formal elements are ignored. More than one speech act occurring per speaker turn is labeled *a/b/c*, etc., and is coded separately for discourse strategy type. Any interrupted act is double coded for type of discourse strategy and for being interrupted. If type of strategy can not be determined from those listed below an act is simply coded **interrupted**.

A.1.1. Caller's initial strategy for obtaining emergency assistance

A caller's initial strategy for obtaining assistance from the emergency dispatch room consists of one of three possible *mutually exclusive* strategies that are on a continuum of level of agency: a **demand** for help, a **request** for help (both in conversational mode of discourse) or **descriptive** information about an emergency situation (narrative mode of discourse).

A.1.1.1. Demand. The caller's initial speech act is a demand (i.e. an imperative command). *Example*:

Dispatcher: Fieldsends police.
Caller: Yeah. Right. *Send a cruiser* down to the Fieldsends center across the Roxy.

A.1.1.2. Request. The caller's initial act is a request (i.e. asking for assistance), or an expressed wish or desire of a general sort. *Example*:

Dispatcher: 911. This line's recorded. What's your emergency?
Caller: Yeah! Yeah! My wife took a er seizure and er *I want to take her to the hospital....*

A.1.1.3. Descriptive. The caller's initial act is descriptive (i.e. provides information about the emergency situation). *Example*:

Dispatcher Fieldsends Police.
Caller: Yeah! How you doing?
There's an accident on Peak Avenue.

A.1.2. Dispatcher initial response to call for emergency assistance

Dispatcher initial responses to caller strategies can be one of four *mutually exclusive* speech acts giving different types of feedback: a verbal **compliance** to the caller's stated needs, an **acknowledge/confirmation** of received information, the **elicitation** of further information, or **no response**.

A.1.2.1. Compliance. The dispatcher signals the imminent dispatch of assistance (i.e. informs the caller that rescue is on the way in response to the call for assistance, as in example 1). Alternative, if dispatcher recognizes that the emergency is a repeat report of the same incident, he may signal that assistance has already been sent out, as in example 2.

Example 1: Caller: Hurry up, please sir. I don't know if he is having a stroke or a heart attack. Just get here <get here now> [>]!
Dispatcher: <Yeah> [<]! Okay. Okay. Calm right down. *Be right there*.

Example 2: Caller: Um, yeah. I'm not sure exactly what it is. The neighbor downstairs thinks the old man had a heart attack.
Dispatcher: Yeah! *We're on the way. She just called. I have an ambulance and a police car on the way over there*. Okay?

A.1.2.2. Acknowledgment/confirmation (including disconfirmation). The dispatcher signals to the caller that they are either listening (i.e. use of backchannels to let the caller know that he/she has been heard or that he/she should continue speaking, as in example 1, or verify information by asking confirmation questions or repeating the caller's utterance(s) (can be local or distanced from original caller utterance), as in example 2.

Example 1: Caller: Hi. I'm calling from Nell's Gym.
Dispatcher: <Yeah> [>]!
Caller: <916 Peak St> [<]. Some kind of fumes and I'm not sure where they're coming from

Example 2: Caller: Hi. We have a domestic disturbance on the first floor. One of my tenants two elderly ladies at 8 History Street.
Dispatcher: Two elderly ladies?
Caller: Yeah!

A.1.2.3. Elicitation. The dispatcher asks the caller for further details about their emergency (i.e. tries to obtain specific information necessary for deploying emergency assistance). *Example:*

Caller: Um, Yes. My son has just run away.

Dispatcher: Okay. [pauses]. Hold on just for a moment. *Did you have a problem*?
Caller: Yeah!....

A.1.2.4. No response. The dispatcher makes no response to the caller's initial attempt to get help.

Caller: Walton St. The house alarm just went off.
Dispatcher: [*no response*].
Caller: Um, I guess you were up here yesterday <my> [/] my kids were telling me....

A.2. Level two: assessment of information provided

A.2.1. Caller provision of detail

The caller's initial demand, request or description may provide some, all or none of the following information: **who** they are and/or who is in need of assistance, **where** they are located (i.e. an address or telephone where they can be contacted), **what** the nature of their emergency is in terms of a diagnosis or symptoms, as well as relevant background details such as age or medical history, **when** the emergency occurred, **why** the emergency occurred in terms of a specific causal mechanism (e.g. *I broke may leg, **because** I fell out of a tree*), or **how** the emergency happened (note, however, that the latter three may be irrelevant; **when** can be assumed to be now or the very recent past, **why** and **how**, while key evaluative components of the narrative genre, are not crucial to providing effective emergency assistance).

A.2.2. Dispatcher elicitation of detail

Similarly the dispatcher may acknowledge/confirm or elicit these same key elements (i.e. dispatcher may repeat the caller's provision of who, where, what etc., or ask for information about who, where, what, etc.).

A.3. Level three: subsequent adaptive strategies

If the caller's initial strategy for obtaining assistance is met with immediate success (i.e. the dispatcher complies with emergency assistance at the first exchange) — no further coding is necessary. However, emergency calls of simply one turn per caller and dispatcher are exceptional. Most initial dispatcher feedback consists of either acknowledgment/confirmation or elicitation. Thus the caller is most often required to make a second (and perhaps subsequent) communicative attempt.

A.3.1. Subsequent adaptive strategies of callers

The caller is required to adapt their call for assistance contingent on the dispatcher's prior speech act. For instance the dispatcher may simply repeat the caller's previous move in order to confirm that they heard the caller correctly. The caller's subsequent move therefore requires that they either **acknowledge/confirm** or **negate** the dispatcher's feedback. Nine *mutually exclusive* strategies can be identified.

A.3.1.1. Repetition of the content of a previous act. (Both adjacent and nonadjacent repetitions). This category takes precedent over other categories (i.e. in the following example the repeated material is providing elicited information, but is coded as repetition due to its earlier use in the call. *Example:*

Caller: He is very pale.
(Later in call)
Dispatcher: Any apparent medical problems?
Caller: *...He's extremely pale.*

A.3.1.2. Simplification of the content a previous act. Example:

Caller: Rescue. 445 Midland Street. Apartment 502
Dispatcher: Apartment what?
Caller: *502.*

A.3.1.3. Addition of information (elicited by dispatcher). Example:

Caller: ...I want to take her [wife] to the hospital....
Dispatcher: Yeah! Okay. What's your address?
Caller: *1 Ronald Street.*

A.3.1.4. Addition of information (unelicited by dispatcher). Example:

Caller: Hello. Yes. I need an ambulance.
Dispatcher: What is.... [interrupted]
Caller: *I'm at number 1 Arran Street.*
Dispatcher: What is the problem?

A.3.1.5. Question dispatcher. Example:

Caller: *What shall I do? [having severed artery]*
Dispatcher: Are you bleeding?

A.3.1.6. Acknowledgment/Confirmation of a previous speaker's act. Example:

Dispatcher: In front of the Roxy?
Caller: *Right!*

A.3.1.7. Negation of a previous speaker's act. Example:

Dispatcher: He's conscious right?
Caller: *Er, no. No.*

A.3.1.8. Justification of the call. Example:

Caller *...if you come here right now you can see what he did to my door. And I'm afraid for my life and I need help.*

A.3.1.9. Other. Infrequently occurring categories including admonishment of the dispatcher and no response. *Example:*

Dispatcher: Okay. Er, they should be right there, okay?
Caller: [*No response*].
Dispatcher Hello?
Caller: Yes?

Once again the caller's provision of who, where, what, etc, is coded in all subsequent adaptive strategies.

A.3.2. Subsequent dispatcher acts

Dispatcher response to each successive caller act is again coded for either compliance, acknowledgment/confirmation, elicitation, no response, as well as an additional category (**other**) containing a number of infrequently occurring types of speech acts.

A.3.2.1. Other. The dispatcher gives advice to, comforts, or admonishes the caller. In the following example the dispatcher gives both advice and comfort to a caller who has severed an artery in his arm:

Dispatcher: Oh. Okay. <We'll> [/] we'll send <an amb> [//] the rescue right down there to you. Have you got a tourniquet on it? Above it? But +/.
Caller: Yes. I'm trying to +/.
Dispatcher: Yes, *well try and get it above it and make sure it's tight. Pull it tight.*
Caller: Oh, okay yes <fine yeah> [>]!
Dispatcher: <*Pull it real tight*> [<]. *Don't worry about it.*

The dispatcher's acknowledgment/confirmation or elicitation of information about who, where, what, etc., in subsequent moves is also coded.

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