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Where Trouble Starts: Communication Breakdown in a Complex Emergency Call

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ABSTRACT

Emergency calls require efficient communication between caller and call taker to establish a need for assistance and dispatch help quickly. Analyzing communication processes at this first link in the emergency medical care chain has important implications for improving the quality of emergency care across the health system. This paper examines an interaction between a call taker and a caller requesting assistance at the scene of a family murder, using a hybrid interactional sociolinguistic approach to analysis. We also draw from court testimony. We demonstrate how several factors contribute to communication breakdown, prolong the call, and lead to the call taker doubting the credibility of the emergency. These include the caller's inability to frame a believable request for help nor clarify his stance concerning the emergency, an absence of urgency and emotion in his description of the incident, an extended focus on and repair of the incident location, and his dysfluent speech behaviors. We demonstrate how communication breakdown is co-constructed and compounded by system-related trouble. This call has useful implications for call-taker training and highlights that when an interaction goes wrong, it has a cascading effect on health care not only for those patients who need the help urgently but also for the efficient running of the health system as a whole.

A functioning healthcare system requires a chain of care and communication at multiple levels, not only between patients and healthcare workers but also between healthcare workers, the care facility and the communities they serve (Storey et al., 2014). Optimal care requires smooth coordination and communication at the transition between each link in the chain of diagnosis, treatment and follow-up processes. Communication breakdowns can occur at any of these points and may have catastrophic implications for the overall treatment the patient receives.

In the context of emergency care, there are added layers of complexity and responsibility because of the multiple role players involved and the time pressure in which they must operate. To improve the quality of emergency healthcare systems there is a need to understand communication processes right from the first link i.e., the emergency medical call itself and examine how communication at this point may impact care processes further down the chain (Lindström, 2012).

Emergency calls are information-dense, time-sensitive interactions where efficient communication is essential to dispatch help quickly (M. Whalen & Zimmerman, 1990). Key information about the nature of the medical incident, contact details and the geographical location must be provided accurately, often in stressful situations and by people who may not have done this before. The call taker has to evaluate this information, decide if the request has merit, and balance this need against the limited resources available (e.g., ambulances and paramedics). This information is then relayed to a dispatcher, who must allocate the appropriate medical response team; the response team must locate the incident, offer care on scene and/or transport the patient to a medical facility; and hand over the patient to their emergency medical team. This implies a linear, controlled sequence in which a call is made, details are collected, and help is dispatched. However, this ideal tends not to reflect the complex, often "messy" operational reality of real-world interactions (Gatrell, 2005).

Several layers or elements may contribute to interactional complexity and/or communication breakdown. In an emergency call, one such element is the type and amount of information needed for the caller's request to be granted (M. Whalen & Zimmerman, 1990). A call taker does not have direct access to the emergency that triggered the call and must make decisions based on the information provided by the caller. Garcia (2015) discusses the significance of a "social *gestalt*" or an understanding that the whole (in this case the actual emergency) is larger than the sum of its parts (the details given by the caller). This understanding requires the call taker to evaluate and assimilate information to recognize a genuine request and assign priority in terms of the type of assistance required with the resources available.

Locating the scene of the incident is another potential source of communication difficulty. Kitzinger et al.'s (2013) work on the formulation of place or location in telephone calls outlines how there may be problems with speaking (which can cause confusion) and/or understanding (due to a lack of shared knowledge or comprehension), both of which require reformulation in an effort to repair meaning.

The notion of trust may also contribute to call complexity and miscommunication. Emergency calls require the caller

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to establish a need for assistance and trust that help will be provided, and the call taker must trust that the request is genuine. Sometimes interactional events cause misalignment, and the legitimacy of the emergency is questioned. Watson (2009) suggests that it is possible to analyze the phenomenon of trust in interactions, in that trust requires that both parties understand and adhere to conversational rules, act responsibly within the interaction and accept that the other party will do the same. As Gambetta (1988) notes, trust is co-constructed. Most participants enter a conversation both wanting to trust and also to be considered trustworthy. Garfinkel's (1963) seminal paper ascertains that since people enter most interactions ready to trust, trust can only be lost not created. However, participants must assess the possible consequences of trusting in terms of the degree of risk, the sanctions it involves, and the anticipated end result (Garcia & Parmer, 1999). Trust becomes particularly important when there is uncertainty about the outcome, actions or motives of others. Cooperation may be achieved without trust, but a lack of trust ultimately compromises the quality of the interaction (Gambetta, 1988).

Emergency call takers are known to have what Garcia and Parmer (1999) call an "attitude of doubt" which may be necessary for allocating limited resources appropriately but equally may compromise service provision for genuine requests. Factors that influence whether the caller is perceived as trustworthy and helpful include their stance (social and physical hierarchy) in relation to the person requiring emergency assistance, with a closer proximity and/or relationship equating with increased levels of trust (M. Whalen & Zimmerman, 1990). Conversely, inconsistencies in the caller's narrative and emphasis on irrelevant details tend to foster mistrust (Garcia & Parmer, 1999). In an emergency medical service (EMS) setting, call takers typically reveal their mistrust by repeated requests for confirmation or clarification of data and/or by asking callers to establish their stance concerning the emergencies (M. Whalen & Zimmerman, 1990).

In this paper, we present a single case study examining the interactional features and layers of complexity that appear to have contributed to a communication breakdown within an emergency medical call. We argue that it is not only the type and amount of information exchanged and the perceived trustworthiness of this information that causes interactional difficulties but that external factors such as system trouble may unwittingly exacerbate communication misalignments.

Background to the call

A gruesome murder at an upmarket golfing estate in the Western Cape, South Africa saw three family members killed with an axe and another left brain-injured with no memory of events. The surviving son called a public EMS call center to report the incident. In court proceedings, it was established that he had Googled emergency call numbers hours before placing the call and that the attacks had probably occurred sometime before he called for help. The caller claimed he had passed out after looking up the emergency numbers (Petersen, 2017b).

Unlike some countries, South Africa does not have a dedicated emergency number like 911 in America, 999 in the UK, or 112 in Europe. There are several numbers in use – for example 10,111 connects to the police, 1017 is for ambulance services and there are also unique provincial numbers in operation. In the context of this call, 107 is a toll-free emergency number specific to the Western Cape which relays information on behalf of the caller to the government-run EMS.

It is well known that public health services in South Africa are under-resourced and that the chances of obtaining urgent help through government-run services are at best uncertain (South African Human Rights Commission, 2007). It is therefore unusual that the caller chose this service rather than one of the well-resourced private EMS companies, especially since investigating police officers on the scene noted that a private EMS number was visible on the family's fridge (Dolley, 2016).

Materials and methods

This unusually lengthy call was 23.27 minutes long and was divided into several parts. A segment of the call was leaked to the press soon after the incident took place, and the remaining parts were made available during court proceedings some three years later. All data are available in the public domain and thus ethics clearance was not sought for this study.

The call begins with (1) an interaction between the caller and call taker. There is then (2) an interaction between the call taker and a dispatcher from the police service. This is followed by (3) a conference call between the caller, call taker and police dispatcher, (4) a discussion between the call taker and the EMS dispatcher, and finally (5) a conference call between the caller, call taker and EMS dispatcher. In this paper, we examine the first part of the call, which is 6 minutes 24 seconds long (included in its entirety in Appendix A; we have however changed some of the identifying details and omitted sections where the caller's telephone and address details are repeated). We have chosen to focus on this preliminary section because we argue that this is where the interactional trouble not only began but also where the pattern of misalignment was set for the ensuing discussions. This part is transcribed using Hepburn and Bolden's (2013) transcription guidelines (see Appendix B). We examined the call using a hybrid interactional sociolinguistic analytic approach (summarized in Penn & Watermeyer, 2018), acknowledging the value of contextual nuances (Street, 2003) in understanding interactional practices. Several researchers listened to the call and provided analytic input over a series of workshops.

The call was examined against the backdrop of our previous research at the call center which dealt with this call (Nattrass et al., 2017; Penn, Koole, et al., 2017; Penn, Watermeyer, et al., 2017). We included testimony from court proceedings that provided context to the inner workings of the EMS and insight into the caller and call taker's perspectives.

J. Whalen and Zimmerman (1998) reflect that the public often blames call takers for unfavorable emergency call outcomes. This may partly explain why, despite the shocking nature of the attacks and subsequent murder conviction of the caller, much attention and criticism in the media was, at the

time, directed toward how the call taker handled this interaction and the general poor functioning of South African public EMS centers. The call taker's behavior was criticized as being callous, obstructive and inept, especially her inability to recognize and record the incident address. The EMS was slated for not training their staff properly and for not meeting the needs of the public they were meant to serve. The public backlash indicated that there was merit in exploring what went wrong and what lessons could be learnt from analyzing this interaction.

Results

Framing the request for help, avoiding urgency and blunted emotions

Interactional trouble is established from the opening conversational turns when the caller fails to describe what is at stake, shows little emotion, and conveys no real sense of urgency. At the same time, the call taker does not pursue the caller's incomplete incident description so the nature of the emergency and the need for immediate assistance is submerged.

Higgins et al. (2001) found that within the first few exchanges of an emergency call, the call taker's vocal tone and response patterns lead to callers deciding if this is a professional who is willing and able to help or one who will not. Cromdal et al. (2012) suggest that a call taker's institutional identification also influences the caller's first conversational turn. At this EMS, call takers have been instructed to open calls with "Ambulance Services" as this was found to be the most efficient identification (Penn, Koole, et al., 2017). Here the call taker deviates from this recommendation, saying: "One oh seven what is your emergency?" (line 1). Such a greeting implies that the call taker is orienting to talk to a fellow call operator and not to a member of the public. The call taker, in line 1, explicitly requests that the caller describe the emergency, yet the caller, possibly flustered by the unexpected "one oh seven" introduction, ignores this request and instead makes what Svennevig (2012) describes as a *statement of need* – "I hhh need – an ambulance –" (line 2).

The caller could also have used an explicit request like, "Can you send an ambulance?" (Svennevig, 2012) or more typically (according to J. Whalen & Zimmerman, 1998) a description of what the medical problem is – for example, "There's a man not moving." Larsen (2013) found that when call takers dispatched help based only on a statement of need, i.e., without a description of the problem (as seen in line 2), this proved problematic as there was often not a genuine emergency, or conversely, when there was a legitimate request, help was more likely to be delayed or even denied as the relative urgency of the incident had not been established.

The linguistic framing of a request often reveals how entitled a caller feels to receive help which in turn impacts service provision. Callers who convey a strong sense of entitlement by using terms like "must," as in "you must send an ambulance" experience earlier uptake by call takers, even when a description of the incident is missing (Larsen, 2013). The reverse also applies, and Svennevig (2012) notes that using polite forms like "please" orients to weaker entitlement and call takers may delay granting help by requesting additional incident-related information (Larsen, 2013).

This caller's statement of need in line 2 does not appear particularly convincing. There is a thin, incomplete, hesitant expansion – "lots of – uh uhm hhh" – to which the call taker responds by repeating the caller's statement (line 3). This repetition may be to clarify what is required since his account is ambiguous in terms of what "lots of" (line 2) refers to. The caller's next turn affirms his need for assistance (line 5), but he does not clarify the ambiguity around how many ambulances are required, nor does he add weight to his statement by describing the medically actionable problem. As Svennevig (2012) notes, the caller's use of the word "please" weakens the urgency as it implies the request may not be granted. The call taker fails to explicitly request further clarification by pressing for a description of the incident and instead moves on to the next item of business asking for the caller's name (line 6). For a second time, the opportunity for the caller to establish urgency and his stance in relation to the incident is missed. Weak entitlement is again evident when the caller confirms a later statement of need by using a filler word "well" (line 129) and "please" (line 130). This along with the elevated tone used to describe the medical problem "head injuries?" (line 139) and the use of the qualifier "think" (line 141), all signal uncertainty.

Cromdal et al. (2008) discuss the importance of the caller providing a *thick enough* description, i.e., presenting enough information to be thought of as credible and entitled to help. Given that his family has been attacked, the caller's description of the incident seems unusually thin. Unlike the J. Whalen et al. (1988) caller who did provide a *thick enough* description, this caller only described the emergency and his stance in reporting it well into the call. This lack of urgency is even more unusual when one considers the work of Tracy (1997), J. Whalen et al. (1988), and Garcia and Parmer (1999) who report that in an emergency call, callers may resist a call taker's emphasis on seemingly irrelevant details like location, names and telephone numbers; callers typically want to describe the problem early on and get an idea of when the ambulance will arrive. This issue came up in court proceedings when the call taker told the judge: "*Normally callers who phone in with this type of emergency set the tone. There was no interruption, no comeback, no getting agitated, and he didn't stop me at any time. He never brought up again in any of the conversations that his whole family had been attacked*" (Farber, 2017b).

The caller's relationship with the victims and incident is so ambiguous that the call taker appears to have assumed it is the caller who needs help – seen when she asks the caller, "Wha – and you [are] the patient?" (line 124). It is at this point that the caller finally thickens his description and provides an account of the emergency.

The caller's eventual description of what is at stake is one point in the call at which one would expect to find emotion. However, he avoids an overt display of feeling and chooses instead to distance himself from the incident. He begins in line 125 by describing his relationship with the victims – "my family" - and indicates his proximity to the

event – "in my house" (line 127) – which should signal trustworthiness (cf. M. Whalen & Zimmerman, 1990). The call taker appears unconvinced and challenges him by suggesting he has called the wrong service – "Okay so you need the police" (line 128). The increase in loudness with an emphatic "NO," the audible breathing sounds, and the slight vocal tremor in line 125 and again in line 132 represent what is probably the strongest iteration of emotion in this call. However, this emotion is not sustained, as when the caller is asked to clarify who is injured, he downgrades his description to the more impersonal "four people" (line 134) and on request expands with "two adults" which he revises to "three adults and one – teenage girl" (line 136).

It is worth remembering that caller emotion is not a given when reporting distressing events. J. Whalen and Zimmerman (1998) found that while emotion is audible from the first turn in some emergency calls, other callers show little affect. However, Garcia (2015) notes that a caller's lack of emotion may contribute to a call taker misreading the urgency and legitimacy of the situation. J. Whalen et al. (1988) note that some EMS protocols advise that an ambulance should be immediately dispatched when callers are audibly distressed, rather than attempt to assess the call priority. In their case study, a nurse call taker was fired for not adhering to this directive. Our study presents a different scenario, one in which the call taker had no medical training and the caller seemed detached and unemotional with none of the typical signs of urgency identified by J. Whalen et al. (1988). The caller's speech was not rushed, there were no exclamations, and his vocal tone was even. The call taker later testified that the misalignment between the seriousness of the emergency and the lack of emotion the caller displayed made her mistrust the veracity of his claim. In his summation, the judge agreed: "*His emotional state is inconsistent with being a victim of crime and for someone who lost most of his family members*" (Petersen, 2018).

Call taker mistrust

Trust is very much dependent on whether people behave as expected (Gambetta, 1988). Given his upmarket address and access to private EMS services, it was unexpected that the caller chose to call a government EMS. When predictable response patterns are disrupted, participants interpret actions from their background schema in an attempt to make sense of the events (Watson, 2009) – and in this instance, one such interpretation may be to decide that the call is a hoax. The call taker testified that in addition the caller's behavior was so atypical of how she believed a person would react to his family being murdered that she was convinced it was a prank and she flagged her supervisor to listen in on the call (Farber, 2017b). Prank calls are an unfortunate reality of this EMS; court evidence indicated that in the six months leading up to the trial, the call center received 238 350 calls of which 35 374 (15%) were hoaxes (Petersen, 2017b).

Similar to behaviors noted in other studies of problematic emergency calls (cf. Garcia, 2015), the call taker repeats several statements made by the caller. Although repeats can be used to achieve a variety of actions (Schegloff, 1997) and are commonly used in the EMS (Nattrass et al., 2017), here the call taker's use of tone and stress appear to indicate that they are being used for clarification rather than for confirmation purposes. According to Larsen (2013), this type of repetition should alert the caller that the call taker is delaying granting the request for help until she is satisfied with the information given. The caller misses or possibly ignores this cue and addresses the repetitions by simply confirming earlier statements without addressing the implied question contained therein, or when asked for specific information such as his telephone number, chooses not to answer directly. In this particular instance, the caller offers an alternate identification, namely his address, claiming not to know the home telephone number (lines 11–13). Previous research at this EMS (Nattrass et al., 2017) suggests that occasionally callers do not provide a contact number and in such instances, the call taker then focuses on the information available, namely the location. Here the call taker does not follow up on the partial address given (line 13) but persists in requesting a contact number (see lines 14, 21). Eventually, the caller complies and provides the landline number. It is unclear why this information was not forthcoming earlier from the caller, and we would argue that the delay contributes to the call taker's mistrust of the caller's intentions.

The call taker's request for someone else to take over the call – "Is there someone else that can speak if you're not able to?" (line 17) and again when she asks: "Who else is in the house?" (line 19) – appears to signal her mistrust of the caller and is possibly an attempt to catch him out as a prank caller. The call taker later testified, "*When people make prank calls, they are normally home alone.*" (Petersen, 2017b). The call taker makes more overt attempts to intimidate the caller into abandoning what she feels is a prank call by mentioning the word "police" several times in the call (lines 63, 128,152, 158) – a strategy the call taker testified she had used in the past to discourage prank callers (Petersen, 2017b).

The call taker asks: "and you need (0.2) the ambulance to go to what?" (line 25). The use of "what" may well be an invitation to describe the nature of the incident, but the caller responds as if the call taker has asked a "where" question by repeating the address (line 26). The caller's orientation to the address may be because "where" is the expected syntactical ending to the phrase "go to." Again, the caller does not assert his entitlement to help by describing the medical emergency or his stance in reporting it. It is also the second time the caller volunteers the location when the call taker has in fact requested other information (see line 13).

The extent of the emergency is only clarified much later on after the call taker asks, "Now who is injured?" (line 131). Her use of the filler word "now" as well as the emphasis on the word "who" suggests doubt and the need for clarity. When the caller replies he revises the possessive pronoun from "my," which signals close proximity to the victims and a high degree of entitlement, to "I think- everyone" (line 132). Garcia (2015) describes the use of "I think" as an uncertainty marker that weakens the probability of getting help. The call taker responds to the caller's uncertainty by repeating "everyone" and "in your

house?" (line 133). This repetition may serve to confirm the caller's proximity to the incident, which would enhance his reporting status, but the call taker's elevated tone and emphasis on the word "house" imply this is a request for clarification rather than a confirmation of the caller's information. This questioning at such a late stage of the call suggests she mistrusts what the caller has told her.

The caller does not react to any of these implied and overt signs of mistrust and seems resigned to repeating information and clarifying details. What he does not do is react to the call taker's apparent suspicions nor does he assert his entitlement to help, which seems unusual and in stark contrast to the emergency call case presented by Svennevig (2012) and J. Whalen et al. (1988), in which a caller displays marked hostility when a call taker withholds acceptance by asking questions in response to the information already given.

Location

The protracted negotiation around the address of the incident is a striking feature of this call, although not entirely unusual in light of our previous research at this EMS (Nattrass et al., 2017). Getting an ambulance to the scene is often challenging, and location difficulties may arise for several reasons. These include a *misspeak* where the caller changes words to repair an error, *recipient recognition* trouble when the call taker misunderstands what is said and the caller reformulates the location to aid understanding (Kitzinger et al., 2013), or as we have described elsewhere (Nattrass et al., 2017), *system trouble*, where the caller's description of where the incident took place does not match the location options offered by the EMS computerized system.

There are several instances of recipient recognition problems in this call, where the call taker does not take up key information about the location. She is unable to process the name of the street that she appears to have misheard (line 27, Heshke vs. Geske). She repeats parts of the address on several occasions (e.g., in lines 34, 43, 52, 71, 75). Repetition does not secure recognition, which seems to be the result of system trouble, as illustrated in lines 38–39, 46, and 54–55, as the street name and area given by the caller do not match the area suggested by the computer system.

The call taker chooses to select the system's options over the caller's description of the location which she feels is unreliable as seen in phrases like "are you sure" (line 52); "you're saying" (line 54) and "you don't know what area" (line 57). She cross-checks the address with the caller's home telephone number on a "police system" (line 63), which complicates matters further by linking the landline with a different street name and number to that given by the caller (lines 65–67).

In an apparent effort to secure the location, the call taker asks for landmarks (see lines 86 and 88), which has been shown to be an effective, popular strategy in this EMS (Nattrass et al., 2017). The call taker's request is delivered in an exasperated manner, however, and seems to be aimed at catching the caller out rather than a genuine attempt to find the location. This is seen when she sighs and is dismissive of the landmarks he presents: "And what else hhh hhh" (line 91) and then "Is that all you know" (line 107). In court proceedings the call taker describes her intent as follows " *... to check if he was pranking the line, I asked for landmarks and surrounding streets to check he was calling where he said he was calling from*" (Petersen, 2017b).

In hindsight, it is difficult to understand why the call taker struggled to recognize and record the address given by the caller. In court, the call taker explained that the address and telephone numbers did not tally and that the address did not show up on her system probably because it is a golfing estate, i.e., a walled-off group of houses created by private residents for lifestyle and security reasons (Petersen, 2017b). While the commentary on social media platforms indicated that members of the public all around the world were able to locate the caller's address in mere seconds using Google Maps, this was not the technology available to the call taker. There are indeed two streets of the same name in the greater Cape Town Metropolitan area, and the computerized system appears to have identified the option unrelated to the information offered by the caller.

What is remarkable is that throughout these location exchanges, the caller chooses not to confront the call taker on her recipient recognition and the system errors. He calmly repeats information and appears accommodating when supplying landmarks. His lack of emotion, urgency or frustration is a consistent feature of the call. The call taker in court described this as follows: "*The call lasted longer than any of my calls for home invasion or assault ... We struggled a bit with the address. He was helpful in giving alternative street names – he didn't get angry, wasn't pressuring, or getting agitated with me. He was just cool and calm, that was the weirdest ever for me*" (Petersen, 2017b). When questioned in court about his lack of emotion, the caller responded that he did feel aggravated, but "*suppressed those feelings of frustration* " since the delay was caused by a "*technical issue*" and not "*incompetence*" (Farber, 2017a).

Caller dysfluencies

Court proceedings revealed that the caller had received speech therapy for a childhood stutter. The caller's lawyer argued that what seemed to be a lack of urgency and an absence of emotion was actually a strategy to control his stuttering: "*He was taught techniques to concentrate on speaking slowly and clearly or else his stutter becomes more severe*" (Petersen, 2017b). The judge agreed that the caller displayed instances of stuttering. However, the call taker testified that she had not picked up any speech impediments and to her, he sounded like someone who was "*hesitant to even make the call ... he sounded like he was thinking about what to say*" (Petersen, 2017b).

Examples of dysfluent behaviors are present throughout the call e.g., the interjections and breath intake in line 2: "ahah, huhm" and "ja" which are typically used by stutterers as fluency facilitators. Word repetitions like "the" in line 95 are also common as are slight hesitations (-) and sound repetitions such as "N (0.2) number" in line 26. Other dysfluent instances include a phrase repetition in line 82 ("is the is the") and prolongation of a sound in line 95 ("f: forty").

People who stutter report that emotional content increases their dysfluencies which may explain the large number of dysfluencies seen in line 148 when the caller describes the attack on his family. His speech contains an interjection (uhm); a sound repetition (I – I); a word repetition (a – an – an) and a phrase repetition (it was – it was). There are two other significant phrase revisions in this conversational turn: firstly, when the caller changes his probable attempt to describe who was attacked or did the attacking ("I uhm") to respond to the request for information about the murder weapon ("a – an – an axe"). He then revises his explanation of what happened ("I – it was – it was") to an explanation of why he is unable to remember – "I- I- think I've blacked out and I've just woken up" (line 149).

Fluent and dysfluent behaviors exist on a continuum and the distinction between stuttered and fluent speech is often blurred (Yaruss, 1997). Here the evidence for a stutter is inconclusive. What is significant however is that the caller's speech hesitancies lower his status as a credible information source. The call taker appears to interpret his dysfluencies as evasive behavior and responds by cutting off two of his attempted descriptions of the medically actionable problem. The first such instance occurs in the caller's opening turn (line 2) "-lots of- uh uhm hhh" and the second in line 20: "There's no one else uh everyone else is." In so doing she misses critical opportunities to establish what is happening at the scene.

Discussion

Few would argue the benefits of constantly monitoring and evaluating the chains of care in health systems. Too often though such processes offer a task-oriented focus on statistics and patient records as measures of effective care (Lewin & Green, 2009) rather than examining communication processes which we argue are the links that hold healthcare systems together. This study shows how interactional complexity and breakdowns in communication at the start of the chain of emergency medical care – that is, in the emergency medical call itself – have the potential to result in significant delays in getting help to those who need it and may impact the eventual medical outcome.

While emergency calls have universal features in that they require specific information around contact details, geographical location, and a description of the emergency, callers respond differently to these standard inquiries, making each call unique with singular and unpredictable characteristics. Identifying call patterns is useful, but it is equally important to look at the outliers. In this call, the communication difficulties are co-constructed and compounded by several factors. The caller's blunted emotion, dysfluent speech, his failure to convey urgency and his stance in relation to the incident and victims, as well as the mismatch between his location description and the system's location options seem to distort what is a genuine need for help. The call taker's apparent mistrust of the caller and his emergency colors the interaction and appears to escalate as the call progresses.

An in-depth examination of problematic interactions, as we see in this call, has the potential to improve the quality of care across the emergency medical care chain, especially as regards emergency call taker training. Interactional analytic approaches are useful tools to equip call takers to develop their capacity for making informed decisions based on an awareness of the conversational dynamics at play (cf. Stokoe, 2014). By examining their conversational practices and learning how to identify layers of interactional complexity, call takers may – as Iedema et al. (2013) suggest – increase their awareness and control over what they ask and how they respond, and thus derive and design their own protocols around what can or should be done differently. For example, call takers' opening sequences often set the tone for the ensuing discussion and can impact trust building with the caller (Higgins et al., 2001). Also, engagement in empathetic conversational turns through acknowledging and thanking callers for their responses may improve call taker decisions and make calls more effective and efficient (Gerwing et al., 2021).

Our analysis suggests that call takers need to be mindful of the way(s) in which a caller may frame their request for help, as this impacts how they as call takers will respond. Call takers need to pursue an accurate description of the incident early on to determine the urgency and type of help required. In this call, had the call taker redirected the caller to describe the medical emergency instead of interrupting him and diverting attention away from his tentative attempts to do so, she may have avoided what turned out to be a significantly protracted call dogged by a sense of mistrust. Caller emotion is also not a given and should not be used to benchmark legitimacy in interactions. Our findings show that call takers need to become adept at evaluating what the caller is reporting, especially relating to the location of an incident, as computerized data recording systems may be fallible.

Finally, having spent time at this EMS, we observed how call takers constantly balance the reason for their existence – providing assistance when people need it most – against the limited resources and imperfect systems they are equipped with. They must hold together complex variables within the interaction for the call to progress and the process of dispatch to be achieved efficiently. This is not an easy task, which researchers and training programs should both acknowledge and respect.

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APPENDIX

Appendix A: The call

CT: One oh seven what is your emergency?
C: Hi >ahah huhm ya< .hh I hhh need - an ambulance - lots of - uh uhm hhh [(Yes please)
C: [You need a [ambulance?
C: Yes. please.
CT: What's your name sir?
C: Uh Andy - Van Buuren
CT: Andy?
C: Yes
CT: What's the contact number you're phoning from?
C: Um my home phone (0.2) number but uhm °>I'm not sure what the home phone number is<° my cell phone-
uh we're at ten Geske street please?
CT: What is this number that you're phoning from?
C: Uh hhh
(2.0)
CT: Is there someone else that can ↑ ˜˜˜speak if you're not able ↑ to?
C: No hh uhm hh hh
CT: Who else is in the house?
C: °There's no one else uh° [everyone else is-
CT: [I need the contact number please?
C: °Ja hhh okay. hhh.° ((area code given))
CT: ((repeats the telephone code))
C: ((gives the number 3 digits at a time which is repeated by CT))
CT: 4.9.3 and you need (0.2) the ambulance to go to what?
C: N (0.2) number ten G- Geske street
CT: Heshke?
C: Geske G.E.S hh
CT: G.E.S?
C: K.E. hhhh
CT: What area's this?
C: It's - in Stellenbosch
and it-it's in D:: De Volte estate hhhh
CT: Number ten (0.2) G:eske street?=
C: =Yes=
CT: =in Stellenbosch?
C: Yes. hhh
CT: I'm not picking it up for Stellenbosch.
I'm picking it up for Du Toitsig Milnerton
C: Uh hh um I - well we're in - okay in in (0.2) De Volte wine lands (0.2) it's an estate. um D.E (0.2) and then another word (0.2) V.O.L.T.E
CT: D.E.V.O.L (0.2) T.E?
C: Ya T.E.
(2.15)
CT: I'm not picking it up ↑ hey for (0.2) Stellenbosch what area in Stellenbosch are you in?
C: Um I I - don't know that's all that -
uh we wer wer we're in De Volte wine lands
it's an estate it's a security estate .hhh
(3.75)

52. CT: Are you sure it's ten (0.2) Geske street?
53. C: Yes [absolutely
54. CT: [Geske](0.2) is in Du Toitsig Milnerton ↑hey .hh
55. and you're saying you out in Stellenbosch.
56. C: Yes.
57. CT: What- and you don't know what area in Stellenbosch.
58. C: It's uh I'm n not sure how more how much more specific I need
59. to be ◦hhhh hhhh◦
60. CT: ((Gives the caller's landline number without the area code))
61. C: Ya
62. (5.0)
63. CT: Let me just check the number (0.2) on police: (0.5) ↑system
64. (2.0)
65. that number picks up
66. (3.0)
67. mmm I'm picking up Burt: street (0.2) number three
68. C: Nah hh .hh
69. (2.0)
70. C: [No-
71. CT: [In Stellenbosch
72. C: Ya can you please just send - an ambulance or more than one
73. ambulance t - to De Volte wine lands - i- in Stellenbosch.
74. [(can you -)
75. CT: [De Volte?
76. C: Ya (0.2) can you find that please.
77. CT: De Vol:te
78. (2.0)
79. Sir? they're gonna ask you the same thing that - that I'm
80. asking you cos you're giving me two different addresses
81. .hhhh De Volte hhhh in wine uhm wine lands in Stellenbosch
82. C: ◦No◦ - De Volte wine lands is the is the estate
83. hh Stellenbosch is the town (0.2)
84. and I'm ((static noise)) Geske street (0.2) number ten
85. CT: Okay Geske street (0.2) number ten .hh
86. Is there a school a church near where you stay?
87. C: [Uhm
88. Ct: [A landmark.
89. C: There's w well there's just the - the estate clubhouse I guess?
90. or the golf course as well [De
91. CT: [And what else ◦hhh hhh◦
92. C: De Volte golf course?
93. CT: Give me the main road as you drive [to where you are.
94. C: [Um the main road
95. I think it's the the R f: forty [four.
96. CT [what? R forty four?
97. C: I think so yeah between Somerset West and - Stellenbosch.
98. CT On the R forty four is there a garage a school a church near
99. to where you stay?
100. C: There's um just across from the um (0.2) th there's a mall uhm=
101. CT =What's it called.
102. C: Eidestad Mall ◦no not Eidestad mall◦ hh um (0.5)
103. th there's a B.P. across from ~me~? Uhm
104. CT: Stellenbosch:(0.2) going to the (map ↑hey) you say there's a

105. B.P.?
106.C: Ya
107.CT: Is that all you know (0.2) the B.P garage. (0.2) no:
108.C: [°yeah°
109.CT: [other shop near in your area?
110.C: Okay okay try D De Volte golf club on my phone's maps that's
111. what it's called
112.CT: De Volte (0.2) golf club
113.C: Yip hh Um
114.CT [Ok
115.C: [it's it's the estate next to Compupark
116.CT: Next to Compupark?
117.C: It's ya it's by Johnstown as well
118. (3.0)
119.CT: By Johnstown?
120.C: Ya it -
121.CT: What is Johnstown
122.C: Johnstown is the next (0.2) suburb next to us
123. (3.0)
124.CT: Wha - and you the patient?
125.C: NO no my ~f - family is ~someone attacked my family .hh~
126.CT: ↑Hey?
127.C: >Someone has attacked my family in my house uhm hh .hh
128.CT: Okay so you need the police? or (0.2) the [ambulance
129.C: [hhh well hhh and an
130. ambulance please yes [uhm
131.CT: [Now who is injured?
132.C: My - ~I think - everyone~ .hh hh
133.CT Everyone in your [house?
134.C [Everyone four people yes
135.CT: Adults (.) two adults?
136.C: Two adults and two - w-w-well three adults and one - teenage
137. girl °yes° .hh
138.CT: What are the injuries?
139.C: Um - er head injuries? I look uh hh .hh hh .hh
140.CT: Are they conscious?
141.C: It ~I don't think so~ my sisters moving but ~that's it~
142. (1.25)
143.CT: Suspects still on scene there sir?
144.C: Sorry?
145.CT: Are there any suspects on scene?
146.C: °Uh° no - no- they- #ran away#
147.CT: With what hhh .hhh were they attacked? hh .hh
148.C: ~I uhm a – an - an axe I - it was - it was -~
149. I- I- think I've blacked out and I've just woken up~
150. (3.0)
151.CT: °With an axe° ((typing))
152. okay stay on the line I'm gonna speak to the police?
153.C: Thank you but ↑please send an ambulance as quickly as possible
154.CT: Yes (0.2) are you the only one that's conscious
155.C: [Yes
156.CT [you're not (with) the others are unconscious?
157.C: [Yeah

158.CT: [↑Hold I'm gonna speak to police to check on your number
159. where you are cos you don't know your street name (0.2) you say
160.C: The the street name is Geske street
161.CT: Okay I'm not picking it up on the contact number that you're
162. giving me
163.C: °okay° hhhh
164.CT: Just hold

Appendix B: Glossary of transcription symbols

=	No interval between adjacent utterances, the second being latched immediately to the first
[	The start of an overlap
:	An extension of the sound or syllable
?	Rising inflection, not necessarily a question
.	Falling intonation
↑	A noticeably higher pitch
text	Emphasis
°word°	Lowered volume
>word<	Rushed speech
.hhh	Inhalation; the number of "h" denotes the length of inhalation
(0.0)	Gaps in speech to the nearest tenth of a sec
(.)	A brief gap in speech
(word)	Word is in doubt, as in unintelligible output
#	"Creaky" voice
~	Tremulous voice
–	Speech is cut-off like a glottal stop