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Summarising in medical emergencies: The role of the discourse marker *so*

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ABSTRACT

This article is concerned with the in situ negotiation of epistemic authority through the mobilisation of summaries in the context of medical emergencies. It focuses on the use of the discourse marker *so* in prefacing summaries as a strategy for claiming epistemic primacy, with particular attention being paid to *so*'s multimodal accomplishment. Taking an interactional sociolinguistic approach, we bring together simulated and real-life trauma emergencies and zoom in on the role of the institutionally defined team leader.

Our findings illustrate that summarising in this context is almost exclusively reserved for team leaders, with *so* being an integral part in this process, consistently prefacing team leaders' summaries. These summary acts, in turn, contribute to the summarisation process, which is part and parcel of role performance and *doing* leadership. We unpack the spatiotemporal dimensions of *so*, highlighting the systematicity of its use in the material space of the emergency room, and make a case for the need to capture discourse markers in the situated spatiolinguistic context.

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1. Introduction

In this article, we examine how healthcare professionals negotiate epistemic authority through the mobilisation of summaries in the context of trauma emergencies. We focus on the function of the discourse marker (DM) *so* and its multimodal manifestation in summarising environments, demonstrating how it is part and parcel of a process where team leaders make, and are projected to, epistemic claims. We distinguish between summary acts and the summarisation process as part of leadership and teamwork in the context of our work.

Trauma emergencies are high-risk, high urgency situations, in which ad hoc multidisciplinary teams come together for a short period of time. Communication of emergency teams is one of the main factors for patient safety/harm (Zimmer et al., 2021), with most of the preventable or potentially preventable deaths in this context being attributed to communication failures, rather than poor clinical performance (Vioque et al., 2014). Despite the evidence, however, interactions in the trauma context remain relatively unexplored: the gap is even bigger when it comes to discourse analytic approaches – as the one taken here – for the study of interaction in interdisciplinary ad hoc emergency teams (for a discussion see Gundrosen et al., 2016).

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Previous work has shed light on the importance of summaries in institutional discourse. In the healthcare context, summaries remain under-researched (Quilligan and Silverman, 2012), even though they can increase accuracy of the collected information and help structure the consultation. Clifton (2009) draws attention to the leadership functions of summaries, arguing that they provide an opportunity to exert power: this is directly aligned to our work, which shows that team leaders use summaries as a strategy for controlling the interactional floor and claiming epistemic authority.

There is a significant body of work on DMs, also known, among others, as *pragmatic markers* (Fraser, 1999), *linking words* (Boardman and Frydenberg, 2002), and *conjunctions* (Halliday and Matthiessen, 2004), as they have caught linguists' attention early on, particularly in the fields of historical pragmatics and sociopragmatics.¹ It is now well established that *so* is multifunctional (we discuss some of its main functions in detail later). What is less studied, however, is the role of *so* specifically in summarising environments, and even more absent from the literature is evidence on the multimodal manifestation of DMs in general and *so* in particular. We examine here the role of *so* in summaries and unpack its syntactic, pragmatic, and multimodal properties in order to address this gap. We argue that *so* is a stable and visible device which leaders systematically use when they are expected to linguistically 'do' leadership in their setting. The presence, and/or absence, of such linguistic features provides a mechanism for the study of negotiation of professional roles and practices in complex professional settings.

Although DMs have been explored primarily from a Conversation Analysis (CA) perspective, we take an Interactional Sociolinguistics (IS) approach and make a case for the need to consider the macro-context in their study. We bring together two datasets, audio recorded real-life, and video recorded simulated trauma emergencies. We draw here on a subset of 20 cases (10 per dataset) and illustrate the systematicity of our findings across datasets.

Our analysis demonstrates that *so* is consistently deployed by team leaders for taking/holding the conversational floor and getting the teams' attention, facilitating the launch of successful summaries. We show that *so*-prefaced summaries do not function as neutral information sharing of what is already known. Rather, they constitute epistemic claims: not everyone is legitimised to summarise crucial information for the team, and those who do, position selves in a position of power. This, in turn, can be reaffirmed or disputed by the rest of the team. This epistemic function of *so* is consistently manifested in a multimodal way in summaries, as the *so*-prefaced transition to the main summary also involves a transition to a central point in the material space, an aspect which remains significantly understudied in workplace interaction. We also illustrate that *so* has a privileged interactional role and is not replaced by other DMs in our data, indicating interactional trouble when the expected interactional performance deviates from the norm.

2. Discourse markers: Evidence and gap

Multiple studies have focused on DMs' functions, with the primary ones being connecting elements/units and contributing to a text's/utterance's coherence (Fraser, 1990; Halliday and Hasan, 1976; Schiffrin, 1987). A rich body of literature on DMs, being on the rise since the mid-1990s (Jucker and Ziv, 1998; Traugott, 1995), originates in the field of historical pragmatics (Brinton, 2010, for a discussion). Even though this work prioritises the historical study of DMs and their processes of change, which is not the focus of this article, it has greatly contributed to the shift from what Longacre (1976) labelled as 'mystery particles' to an advanced understanding of their formal properties, including grammatical, syntactical, and phonological characteristics.

More relevant here is literature on the sociopragmatic functions of DMs, which pays attention to their contextual information (e.g., Foolen, 2012). Even though there is little research so far focusing on the situational context in which DMs are produced (Lam, 2009), there is some evidence on their role in *doing* leadership: Vine and Holmes (2023), for instance, illustrate how the pragmatic markers *eh* and *you know* are used to construct a progressive leadership identity in New Zealand workplaces. Building on this work, we illustrate the role of *so* in claiming epistemic rights.

There is also a considerable CA body of work on DMs, with some of them, such as *well*, *right*, and *OK*, being more extensively studied (i.e., Innes, 2010; Othman, 2010). Our focus here is on *so*, on which there is already a considerable body of work – even though, in Bolden's words, this is still 'surprisingly scarce' (2009: 974). What is less studied, however, and is our focus in this article, is the systematic occurrence of *so* in summarising environments and the consistent alignment with the embodied claim of leadership in the material space of the encounter.

Further, even though much research has been conducted on the functions and categorisations of DMs, little attention has been paid, so far, to their multimodal accomplishment. The gap and the current 'mono-modal' approach to DMs are highlighted by Hata (2016), who argues that 'our understanding of DMs would benefit from further studies designed to take into serious consideration the multimodality of interactions, which potentially offers a re-classification of the use of DMs in discourse' (p. 48). Some notable exceptions include Baiat et al.'s (2013) multimodal analysis of *well* in 'spontaneous' speech, which showed a correlation between the use of *well* and averted eye gaze, and Ferré's (2011) analysis of three French DMs (*donc*; *alors*; *en fait*), which drew connections between the markers' use and gaze direction and hand gesture, but no regularity of head movements. Finally, Adolphs and Knight's (2008) multimodal corpus-based analysis of DMs illustrated that some markers, such as *so*, *well*, and *like*, are more frequently found with co-expressed gestures than others.

Zooming in on *so*, previous work has focused on its *sequential* functions, illustrating that it marks the relationship between two adjacent utterances (Fung and Carter, 2007), and *inferential/causal* functions – the effect of the result it carries (Schiffrin,

¹ Some scholars make a distinction between *discourse markers* (e.g., *well*; *now*; *I mean*) and *connectives* (*so*; *and*; *or*; *but*). The terminology surrounding these particles is not consistent: we use the term *discourse marker* as an umbrella term accommodating connectives, too.

1987; Fraser, 1999). So is also frequently used as a boundary marker – a common device for moving forward the agenda (for a recent overview of *so*'s main functions see Algouzi, 2021). Bolden (2008), for instance, argues that in institutional encounters, *so*-prefaced utterances can mark a move to the interaction's core activity – the shift to a particular agenda: we are particularly interested here in the shift to summarising environments.

There are a few references on *so*'s summarising function in the literature, even though, to the best of our knowledge, this has not been investigated in detail: it is exactly this summarising function we aim to unpack. Redeker (1990: 373), for instance, reports high frequency of *so* indicating 'summing-up or conclusion' (emphasis ours). We have summarised some of the classifications of *so* for reasons of illustration in Table 1 below.

Table 1

Classifications of *so* in the literature (Müller (2005: 68), Lam (2010: 661), Buysse (2012: 1767), Liu (2017: 495)).

Reference	Classification levels	Functions
Müller (2005: 68)	textual	<ul style="list-style-type: none"> marking result or consequence, main idea unit marker, summarizing/rewording/giving an example, sequential <i>so</i>, boundary marker.
	interactive	<ul style="list-style-type: none"> speech act marker – question or request, speech act marker – opinion, marking implied result, marker of a transition relevance place.
Lam (2010: 661)	textual	<ul style="list-style-type: none"> framing linking consequential
	interpersonal	<ul style="list-style-type: none"> responsive emotive
	interactional	<ul style="list-style-type: none"> processing turn managing
Buysse (2012: 1767)	ideational	<ul style="list-style-type: none"> indicate a result
	interpersonal	<ul style="list-style-type: none"> draw a conclusion, prompt, hold the floor.
	textual	<ul style="list-style-type: none"> introduce a summary, introduce a section of the discourse, indicate a shift back to a higher unit of the discourse, introduce a new sequence, introduce elaboration, mark self-correction.
Liu (2017: 495)	ideational	<ul style="list-style-type: none"> indicating a result
	textual	<ul style="list-style-type: none"> sequencing summarizing shifting a topic holding the floor
	interpersonal	<ul style="list-style-type: none"> yielding the floor

As illustrated in Table 1, *so*'s summarising function is mentioned in Buysse's (2012), Liu's (2017) and Müller's (2005) classifications, all of whom place it under the 'textual' level. Overall, the textual level encompasses functions related to structuring, organisation, and cohesion of discourse. Interpersonal functions are those marking 'speakers' attitudes, evaluations, and feelings toward the preceding discourse', and 'interactional functions are associated with speakers' planning process and turn-managing activities' (Lam, 2010: 660). Through our data analysis, we argue that *so* does not only serve structure-related purposes. Rather, the syntactic affordances of *so* make it a useful mechanism for claiming power in context. Hence *so* is consistently mobilised in summarising environments by team leaders in order to take/hold the conversational floor and bring the team together. We expand on this in the discussion.

Even though classifications as the ones included in Table 1 can be useful for systematising observations, under an IS perspective, we understand *so*'s textual functions as part and parcel of its interactional functions, and thus refrain from using the aforementioned labels. The difficulty in isolating these functions is also mirrored in the classifications themselves, as the function of 'holding the floor', for instance, is considered *interpersonal* by Buysse (2012), but *textual* by Liu (2017).

Zooming in on the healthcare context, there is very little evidence on the use of DMs, and this is limited on first (L1) and second language (L2) comparisons: Vickers and Goble (2011), for instance, examine the use of English DMs in Spanish medical consultations, while Han et al. (2020) look at the differences in nurses' use of DMs in L1/L2 when interviewing patients. Our focus is different here, as we examine the use of *so* in English-speaking teams only.

Next, we turn to our methodology.

3. Methodology

3.1. Context

Our datasets are drawn from two projects investigating the management of trauma emergencies, the *TeamLeader* and the *Teamwork in the COVID-19 Zone* (*Teamwork*, for short). Trauma emergencies constitute a high risk, high urgency environment, in which ad hoc multidisciplinary teams come together temporarily for the patient's benefit. Trauma teams vary significantly in their formation and size, depending on the case's severity, the time allowed from the pre-hospital alert to the patient's arrival, and staff members' availability at a given time (Tiel Groenestege-Kreb et al. (2014) on trauma teams' variation (inter) nationally).

We introduce the two projects here in chronological order. Ethical approval has been obtained for both studies, and all participants have consented to participating. The first study is the *TeamLeader*, an ethnographic study conducted in the resuscitation area (*resus*) of one of the busiest Major Trauma Centres (MTC) in the UK. The study aimed to unpack teamwork and leadership processes of trauma teams and involved observations, audio recordings of adult trauma emergencies, and ad hoc interviews with the involved staff members (cf. Table 2 for an overview of the data). The ethnographic design of the *TeamLeader* project provided us with a rich insight into the resus ecology and laid the foundations for the *Teamwork* study.

The *Teamwork* study explored how the use of Level 3 Personal Protective Equipment (PPE) impacts communication, as well as the compensation strategies used by team members to share information. This study involved video recorded simulated scenarios in which trauma teams manage two types of adult emergencies in an MTC: one trauma emergency, haemothorax following fall from horse,² and one medical emergency, ST segment elevation myocardial infarction (STEMI).³ In *Teamwork*'s simulations, teams were entering the simulation suite knowing they would be asked to handle an emergency, but not what type of emergency. The patient was a full-body patient simulator (*manikin*), in line with the hospital's simulation standards. In this article, we draw on trauma scenarios only for reasons of consistency between the two datasets.

We consider the two contexts (simulated/real-life emergencies) comparable: we have argued elsewhere that clinical simulations constitute authentic environments for what they are, and 'appropriate for the study of "naturally occurring" team interactions' (Mesinioti et al., 2023, p. 166). We demonstrate throughout our analysis the consistency of patterns across datasets.

The wider datasets for both studies, as well as the subsets used here, are summarised in Table 2.

Table 2
Information on the datasets.

Study	Dataset	Subset used here
<i>TeamLeader</i> study	15 audio recorded real-life trauma emergencies 146 h of ethnographic observations, covering (at least partly) 23 shifts Ad hoc interviews with staff members	10 trauma emergencies The whole body of observations and ad hoc interviews informs the analysis
<i>Teamwork</i> study	30 video recorded simulated emergencies so far (15 teams, each handling one medical and one trauma emergency)	10 trauma emergencies

3.2. Interactional sociolinguistics

DMs have been primarily investigated from a CA perspective, in line with the approach's commitment to a close reading of even the smallest units of interaction (Bolden, 2008; Raymond, 2004). A CA reading of *so* is not our aim here, and thus we do not conduct an exhaustive micro-analysis of all its sequences. Rather, the **first** gap we aim to address is the lack of research on the situational context in which DMs are produced as part of wider organisational processes and their use in that specific context (Lam, 2009) – in our case, summarising environments in trauma emergencies. To address this gap, we take an IS approach, bringing together the sequential organisation of interaction (micro-level) and the broader situational context (macro-level) in which *so* occurs. Although scarce, there is some evidence on how a sociolinguistic analysis of pragmatic markers can provide valuable insights about leadership (Vine and Holmes, 2023).

IS has been already extensively used in analysing workplace discourse following the influential and still widely used approach developed by Holmes and the Language in the Workplace Project (LWP, 1996 onwards). Studies taking this approach have further developed the methodology and addressed issues of teamwork and leadership in institutional contexts, including corporate settings (Angouri and Marra, 2011; Holmes et al., 2011), healthcare institutions (Chimbwete-Phiri and Schnurr, 2020; Zayts and Lazzaro-Salazar, 2020), and courtrooms (Eades, 2010).

Our **second** aim is to unpack the multimodal properties of *so*, as 'mono-modal' approaches to the study of DMs still remain the norm. Our IS approach is appropriate for accommodating such multimodal dimensions, as IS scholars have exhibited an

² Haemothorax is a collection of blood in the space between the chest wall and the lung (the pleural cavity), most usually caused by chest trauma (MedlinePlus, n.d.).

³ STEMI is a very serious type of heart attack.

interest in meaning-making modes other than talk early on, albeit not always systematically: see, for instance, the emphasis on gestures by Gumperz (1982), for many the founding father of IS.

It is worth noting that, under an IS approach, the units of analysis are linguistic features (large or small) and their function as interactional cues in context. Cues can be understood as ‘devices’ adding to the semantic meaning of utterances – in our case, the occurrences of *so* and its syntactic/pragmatic functions – and not excerpts/cases/teams. Through a detailed micro-analysis, we identify patterns based on a) frequency of occurrence and b) markedness on the basis of the researchers’ understanding of context. We thus base our claims around systematicity and representativeness ‘on the analysis of both form and function and frequency of use in a given dataset’ (Mesinioti et al., 2023, p. 167; see also Gumperz, 1982, on IS origins).

4. The role of *so* in summary acts and the summarisation process

To give an illustration of the occurrence of *so* in our data, and their summarising function, we have included, in Table 3, the total number of occurrences and the distribution in relation to summaries. The table is based on two cases and, even though it has no statistical significance, it is an illustration of its distribution in the datasets. Authors 1 and 2 have both analysed the corpus individually and came to an agreement as to which segments are considered summaries.

Table 3

Occurrences of *so* in two illustrative cases.

	Occurrences of <i>so</i>	<i>So</i> -prefaced summaries	<i>So</i> -prefaced summaries launched by team leaders
Case 1 (simulations)	30	7	6
Case 2 (real-life)	43	12	8
Total	73	19	14

As illustrated in Table 3, approximately one-fourth of *so*’s occurrences in the two cases introduce a summary and these numbers are consistent throughout the corpus. Given its multifunctionality, the prominence of *so* in summarising environments is evident. Most of those are launched by team leaders, with the second role most frequently introducing *so*-prefaced summaries being the ED doctor who conducts the primary survey: this is also second in the institutional hierarchy, which points to the relationship between summarising and epistemic authority. Other systematic functions of *so* in the corpus include linking, holding the floor, and marking a boundary. A discussion of those goes beyond the scope of this article.

Our analysis demonstrates that summaries are almost exclusively uttered by (and expected from) team leaders. It is rare for junior team members to step up and initiate a summary (only 7 occurrences in the whole corpus). When this happens, it is indicative of interactional trouble and the team leader’s difficulty to *do* leadership. We will demonstrate this in Excerpt 5. This systematicity of *so* at the start of successful summaries points to *so* as an integral part of the summarisation process, at least in our context, and has significant implications for training/recommendations: we unpack this further in the discussion.

Our analysis also highlights the consistent multimodal manifestation of *so* in these summarising environments: in launching *so*-prefaced summaries, team leaders shift to/occupy a central material zone, gathering the team around them. This multimodal accomplishment of *so*-prefaced summaries is a core strategy for claiming epistemic authority and further supports our reading of *so*’s function in situ. Accordingly, we have organised the following sections in demonstrating the systematic characteristics of the use of *so* and its functions in our context. We examined summaries in different temporal points of our data (both the early and late stages of the emergency case), to examine if the function of *so* depends on the temporal point at which such summaries occur. We will show the consistency of use and argue that summaries are temporal acts which constitute part of a *summarising process*. This is a core part of the management of the medical emergency encounter. We start with examples from the early stages below.

4.1. Early stages of the emergency case: Summarising pre-hospital information

The first temporal point at which team leaders are ordinarily expected to enact a summary and achieve a summarisation moment for the team is early on in the case, when the team has gathered in the emergency room and wait for the patient. In such cases, the team leader, who has already been informed for the upcoming emergency, briefs the team, updating them on what is known so far. The act of summarising in this specific context, where multiprofessional teams work together under high pressure, does not only relate to the introduction of new/existing information: rather, it serves coordinating and task allocation functions, through which team leaders pull together the knowledge the team holds. This pre-briefing stage, thus, provides the team leader with the opportunity to bring the whole team together and ‘create a shared mental model of the

patient's current status as well as the anticipated plan' (Victorian State Trauma System – Major Trauma Guidelines and Education, n.d.). Excerpt 1 below captures such an early pre-arrival summary.

Excerpt 1.^{4,5}

Excerpt 1 is drawn from Case 3 of the *Teamwork* study. The team starts arriving in the simulation suite and wait for the patient. *Noah*, the team leader, talks to a small group (Instances 1 & 2) before proceeding to summarising the current situation for the whole team (Instance 3).



- | | | | |
|----------|--------------------------|---------|---------------------------|
| 1. Noah | thank you (.) er- just | 9. Noah | Arina and Kira (.) so (.) |
| 2. | to (unclear) your names | 10. | I'm Noah† (.) I'll be |
| 3. Kira | (.) Kira ((Noah looks at | 11. | leading this (trauma) and |
| 4. | the second woman)) | 12. | that's my lovely team |
| 5. Arina | Arina= | | |
| 6. Noah | =Arina | | |
| 7. Arina | yeah (.) I'm the staff | | |
| 8. | nurse | | |

Instance 1 & 2. The moments before the team leader's summary.



- | | |
|-----------|---|
| 13. Noah | <u>so guys!</u> (1.0) We have a 39 female (.) motorcycle versus |
| 14. | car: (.) a:nd inju= injuries (we're) suspecting neck |
| 15. | chest and pelvis; (1.0) a bit (.) bit hypotensive (.) 95 |
| 16. | systolic with (.) tachycardia (1.0) OK GCS 15 (.) a:nd |
| 17. | she has been given the tranexamic acid 1 gram (2.0) |
| 18. | <u>so (.)</u> regarding the allocation (.) u::h (.) Pablo would |
| 19. | you be u::hm alright to do the airway† |
| 20. Pablo | Yes I'm doing it |
| 21. | ((Noah continues with the task allocation)) |

Instance 3. The team leader's summary.

We have included Instances 1 and 2, which precede Noah's summary, in order to provide a close reading of how the transition to the summary is accomplished multimodally. In Instance 1, Noah familiarises himself with the team (remember that these are ad hoc teams, so staff members do not always know each other). Noah stands close to the members he asks to introduce themselves, Kira and Arina, and directly looks at them, while he has no eye contact with Marcus, the ODP practitioner, who stands behind him, at the scribe's desk. In Instance 2, Noah can be already seen opening up the 'circle', while introducing himself: he still excludes Marcus and Sonja, an ED registrar, who stand behind him. His transition to the summary which requires all members' attention, in Instance 3, is not only marked with a *so*-prefaced utterance, but also a simultaneous move in the material space, as he takes a couple of steps back and turns his torso: he now has visual contact with everyone, as the whole team is gathered around him.

Noah's utterance in line 13 is prefaced by *so* and followed by a pause, which functions as a boundary marker to the summary. With *so* in turn-initial positions consistently identified in the literature as an attention-getting mechanism (i.e.,

⁴ To protect our participants' anonymity, all names are pseudonyms, and all screenshots are blurred. We use an arrow to mark the team leader.

⁵ Transcription conventions are provided in the [Appendix](#).

Buysse, 2012), Noah succeeds in launching the summary, as his utterance is completely uninterrupted and includes mechanism of injury (lines 13–14), suspected injuries (lines 14–15), patient's condition (lines 15–16) and pre-hospital medication (line 17). In line 18, a second *so* followed, again, by a brief pause marks a second transition, this time from what is known to the action plan/task allocation. *So* is frequently found within summaries, too, clearly marking a transition to the next steps. This sets the tone for the next course of action and reinforces the shared knowledge within the team. The significance of those stages for medical performance has been reported elsewhere: for the purposes of this paper, our aim is to show the role of *so* in initiating and sequentially organising a process which, in effect, is an ongoing summarisation/epistemic negotiation process. We illustrate these further in the light of the second dataset.

The next excerpt is also drawn from the *Teamwork* study (Case 6).

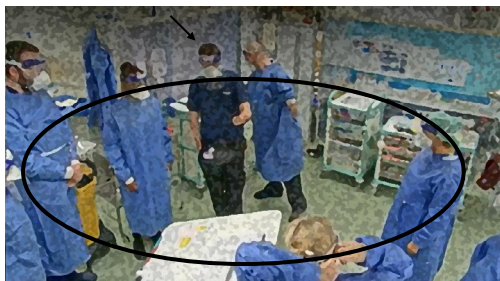
Excerpt 2.

Excerpt 2 is drawn from early stages of Case 6, when the team have entered the room and are preparing for the patient's arrival.



1. Tim so (.) everyone; gather around
2. ((a few lines omitted - staff members introduce themselves))
- 3.

Instance 1. The team enters the simulation suite.



4. Tim so we've got a 39-year-old female who's a motorcyclist
5. (.) she's hit a ca::r (1.0) approximately (.) (he looks at the whiteboard with patient's information) we don't have a time of injury (1.0) e:r (.) they established she's got neck (.) chest (.) and pelvic injuries (.) she's haemodynamically unstable (.) blood pressure is (.) 90-ish and her heart rate 130; (.) we've preregistered the patient (.) we've activated the MHP and (.) Tara do you mind prebooking the scans and talking to radiology; (1.0) we'll find out- we'll- we'll assess her when she gets here (.) we'll try and get her into scans in 15 minutes (.) OK; does anyone have any questions;
- 15.

Instance 2. Team leader's summary.

Instance 1 captures the moments when the team enters the simulation suite and start dressing up. Staff members can be seen all over the room, preparing individually. In a *so*-prefaced utterance followed by a brief pause (line 1), Tim, the team leader, explicitly asks them to 'gather around', accompanying his request with a relevant hand gesture. The pattern noticed in Excerpt 1, which is bringing the team together multimodally (not only verbally but manifested in the material space, too) for the summary using a *so*-prefaced summary, is even more explicit here. The multifunctional role of *so* has been discussed earlier: in excerpts 1 and 2, turn-initial *so*, followed by a pause, marks a topical boundary used to get the team's attention. The cumulative effect of those features, structurally connected to *so*, secures the successful launch of the summary. In more detail

and in line with the process of contextualisation (Auer and DiLuzio, 1992) there is no direct and one-to-one relationship between a linguistic feature (*so* in this case) and interpretation of a whole utterance. Utterances are produced in a context which comes with constraints and expectations of performance, particularly in a setting like the one we discuss here which is strictly regulated in terms of professional practice. However, language is 'done' within the context constraints, and in its turn reaffirms or challenges the possible interpretations a context can afford. Here, *so* is visible as a summary device, mobilised by those in roles of leadership, perpetuates the expectations of the repertoire of a team leader, and cumulatively adds the contextual interpretation of 'doing' leadership.

The team leader and the rest of the team introduce themselves (not shown in Excerpt 2). Instance 2, then, captures Tim's shift to the summary. In line with our previous observations, the transition to the summary is prefaced by *so*. In the following lines, Tim updates the team on what is already known (mechanism of injury, lines 4–5; patient's current status, lines 8–10) and what is the action plan (lines 11–14). Tim's way of taking the floor is successful, as there are no indications of interactional trouble throughout the summary (i.e., no overlaps and interruptions). The successful shift to the summary is also attested in the material space, as the team members in Instance 2 create a circle, maintaining visual contact with each other.

Excerpts 1 and 2 have illustrated the role of *so* in launching summaries, as well as its multimodal manifestation in 'bringing the team together'. As this is prototypically associated with team leaders in both our datasets, it can be argued that the multimodal performance of *so* in launching summaries is one of team leaders' strategies to claim, and negotiate, epistemic primacy – those who use *so* for summarising and bringing the team together are the ones legitimised to do so. Judging by the teams' uptake in both excerpts, where staff members gathered around the team leaders and stopped talking, these epistemic claims were successful, with team leaders' epistemic primacy acknowledged. This summarising process runs throughout the episode as an ongoing negotiation of epistemic rights. *So* plays a framing role in both early and late stages of the encounter: we now turn to late stages of the emergencies to discuss this further.

4.2. Late stages of the emergency case: Summarising patient's condition

The first temporal point in which team leaders need to summarise for the team is after the team leader has been updated on the upcoming case, but prior to the patient's arrival (pre-briefing stage). There are other core summary points, too: upon completion of the primary survey by a doctor (usually an ED registrar), for instance, the team leader again summarises for the team. Even though most staff members are present during the examination, and supposedly already know the findings, summarising in our data serves multiple interactional functions related to carrying out the team's practice.

Creating a shared point of reference is a core part of negotiating leadership positions. Hence, identifying and framing what is considered important and/or priority is integral to determining a joint course of action. These are strategies for *doing* leadership and controlling the interactional floor and are normatively associated with senior members – primarily team leaders. Summarising in our context, then, can be seen as a strategy for claiming epistemic primacy (i.e., who is in a position to summarise; who has the *right* to summarise): we have examined epistemic primacy in emergency contexts with a focus on the types of questions raised elsewhere (Mesinioti et al., 2023).

At late stages of the emergency case, a key stage for summarising is after the intervention following the primary survey's results. These are the moments just before the trauma case ends, when team members have performed the required tasks – assessment and stabilisation of the patient – and (usually) the team leader uses a summary as an opportunity for re-assessing the situation and deciding on next steps. Excerpts 3 and 4 are drawn from such late stages.

Excerpt 3

Excerpt 3 is taken from the *Teamwork* study (Case 9). The team works for almost 20 min now. The management of trauma emergencies usually lasts around 20 min in total, before the patient is sent to the computerised tomography (CT) or operating room, depending on the severity of the trauma, so we are at the very end of the case. The team has already drained the patient's chest and resuscitated her with blood products, which are the two main tasks required to be performed in this scenario of haemothorax (see *Context* for a discussion), and the patient starts showing some improvement. As we did in Excerpts 1 and 2, in Instance 1 we provide a screenshot taken before the team leader's summary, and Instance 2 captures the summary itself.



Instance 1. Staff members working individually on their tasks.

((Troy, the ODP practitioner, stands at the equipment table facing the wall. Marina, the ED nurse, stands at the head of the bed and talks to the patient while looking at her. John, an ED doctor, stands at the right bedside, while Sarah, another nurse, is at another corner of the room behind Rama, the team leader (Sarah is not shown in the screenshot). Rama observes silently.))



1. . Rama fine OK (.) so he's an MHP (.) bleeding into his chest
 2. (.) we've treated that with a chest drain (.) we're him
 3. giving the blood to go through (1.0) sats are getting
 4. better (.) so I think we've sorted out this and we can
 5. move on as we're stabilising him (1.0) so: the next
 6. thing (.) once we've finished with the drain i:s (.) we
 7. need to put the pelvic binder on him (.) so what I
 8. suggest is (.) we take him off the scoop (1.0) lift the
 9. scoop up (.) put the binder underneath and put him back
 10. down and take the scoop off (1.0) does that make sense?

Instance 2. The team leader's summary.

Instance 1 captures the moments before the summary, when team members work individually. Rama, the team leader, observes silently before claiming the floor in Instance 2 and producing an extended *so*-prefaced summary. Rama's summary is prefaced with a string of DMs (*fine*, *OK*, *so*; line 1), managing, in this way, to mark a transition from *individual work* to *teamwork* and bring the team together for the summary. Previous work has already indicated that *so* as a boundary marker is often preceded by other DMs and pauses (e.g., Lam, 2009). This is also the case in our data, as *so* is frequently accompanied by other DMs, as is the case in Rama's utterance here. Other DMs often collocating with *so* in these summarising environments are *right/alright*, *OK*, and *fine* (cf. Table 4 for the syntactic properties of *so*).

Rama's summary consists of the following components: patient's type of injury (line 1), treatment (lines 2–3), and current status (lines 3–4). Her floor-taking act is successful in this case, with the *so*-prefaced summary being accomplished multimodally and following the same pattern as Excerpts 1 and 2. The team acknowledges Rama's *right* to talk, not only verbally, by allowing her to produce an extended summary uninterrupted, but also multimodally, as, in Instance 2, they all gather around and indicate their attention to her: the nurse at the head of the bed, who was previously talking to the patient, directly looks at Rama now, while Marina and Troy, who were in other material zones in Instance 1, are found around the bed, creating a circle. No parallel talk or interruptions are observed throughout Rama's summary, which is not always the norm in these high urgency settings. Note, also, that, as was the case in Excerpt 1 (line 18), in line 5 a second, this time prolonged, *so* shifts the topical agenda from what is known to the team to the action plan – one of *so*'s prototypical functions.

Excerpts 1–3 drew on the *Teamwork* study: we chose to draw on excerpts from the *Teamwork* study for reasons of illustration of the multimodal accomplishment of *so*, as video recordings are more appropriate for capturing this information. Our fieldnotes from the *TeamLeader* data, however, suggest that the patterns observed and discussed here are consistent across datasets. Excerpt 4 is drawn from the *TeamLeader* dataset, in order to draw connections between the datasets and highlight the consistency of patterns across the two settings.

Excerpt 4.

Excerpt 4 is from the *TeamLeader* data (Case 10). Similar to Excerpt 3, Excerpt 4 is also drawn from the late stages of the episode. The team has already conducted the primary survey and made sure that the patient is stable, when *Leon*, the team leader, proceeds to summarise for the team.

1. Leon so I'm just gonna summarise for a second to you guys of
2. that's OK (.) so ((PATIENT'S NAME)) he is a:: thirty three
3. year old man who was (dropped) by a car going with
4. approximately twenty miles an hour (.) he: wa:s not
5. (knocked out) as far as I know and I've seen (.) left
6. shoulder injury seems more significant (.) ehm (.) airway
7. is clear (.) breathing ehm is unremarkable (.) circulation
8. is fine (.) he has some bruises on his forehead and a
9. deformed left shoulder (.) we don't think that we've got
10. (indec) in the thorax which we didn't (see) at the moment
11. and (1.0) basically it's a case of (.) ((sighs)) getting
12. him off the scoop (.) ((sighs)) getting his GCM um (.)
13. getting the scans organized and (.) then (.) go through
14. the scanner;

The team leader's summary.

Excerpt 4 captures the launch of Leon's so-prefaced summary: *so* is not accompanied with another DM here but is followed by an introductory clause (*I'm just gonna summarise for a second to you guys if that's OK*; lines 1–2), which explicitly marks a topical transition. This introductory clause is followed by a second *so* (line 2), which prefaces the actual summary. As was the case with Rama in Excerpt 3, the team's attention is successfully drawn here, as for the next 14 lines Leon summarises the type of injury (lines 2–5), patient's condition (lines 5–10) and action plan (lines 11–14) without overlaps or interruptions by the team members. Once again, through the launch of the *so*-prefaced summary, the team leader claims a position of authority – the one who has the *right* to summarise at a specific spatiotemporal point. This is reaffirmed by the rest of the team. The double use of *so* creates the interactional conditions for Leon's summary to successfully lead to an actional plan sequence (lines 11–14). Despite Leon's predetermined role, and the importance and stability of the 'team leader' in 'command and control' structures such as the one we discuss here, in line with leadership work and interactional sociolinguistic workplace studies, we consider '*doing* leadership' a situated achievement which is enacted linguistically in the emplaced, embodied context of the team (e.g., Angouri, 2018). This does not suggest that the leadership position can be claimed by other members without consequences for the overall role/responsibility distribution in the team (we turn to this next), but it highlights the interactional work team leaders need do in managing role/relationships as part of the technical management of the emergency encounter.

In closing, while analysing Excerpts 1–4, we made references to the syntactic properties of *so*, connecting with and contributing to relevant literature. Overall, the variation in turn-initial *so*'s when launching summaries is shown in Table 4.

Table 4
Syntactic properties of *so* in launching summaries.

Syntactic structure	Example
	so
DM(s)	so
(<i>right</i> ; <i>alright</i> ; <i>OK</i> ; <i>fine</i>) + introductory phase +	so
	so + introductory phase

- Excerpt 1, Line 13
- **fine** (.) **so** we've got trauma ca::rt, goo::d
- **alright so** (.) his sats are getting better
- **now let's go through this** (.) **so** (.)...
- **so I'm just gonna summarise for a second...**
- **So can I just recap**↑

We now turn to the last part of our analysis, to examine different uses of *so* and the implications when deviating from expected manifestations of performance.

4.3. *So* as a hesitation marker

In the last two sections, we argued that *so*-prefaced summaries index epistemic primacy, allowing team leaders to do leadership in and through controlling the conversational floor. Drawing on Excerpts 1–4, we illustrated how those summaries were successful, with staff members acknowledging team leaders' epistemic rights. For this last part of our analysis, we draw on an excerpt where this is not the case.

Excerpt 5.

As was the case with Excerpt 4, Excerpt 5 is drawn from the *TeamLeader* dataset (Case 1). Excerpt 5 captures the team's interaction after the primary survey. We join the team when Tiina claims the floor in an attempt to summarise what is known so far. It is important to note that Tiina here *shares* the leadership role with Mike: Mike is more senior than Tiina, but they both announce to the team early on that they 'will be both leading the trauma'. This is unusual in our data, where the ultimate responsibility for the management of emergencies lies with one person for medicolegal reasons.

Excerpt 5.

Excerpt 5 starts with Tiina taking the floor with a *so*-prefaced utterance. Structurally, this floor-taking act does not differ

1 Tiina so if we: (.) so primary survey wise (.)
 2 ?
 3 Tiina I mea=I mea:n (.) so:: (.)
 4 Mike so obviously airway is fabulous! ←
 5 Tiina yeah!
 6 Mike (indec) breath sounds (loud) and equal ←
 7 Tiina OK right
 8 Mike a:nd (1.0) he::s (.) quite (.) (indec) doesn't give him ←
 9 any tenderness there (.) tenderness over the (indec) and
 10 more down-
 11 Tiina -is that on the [right!
 12 Mike [right (2.0) a:nd no lung burn ←
 13 injuries identified (1.0) and then rash again on the
 14 right side and (indec) his back (3.0)
 15 Tiina right rash what was the area? (.) I think it's on his
 16 back (1.0)
 17 Sally it's on his right-
 18 Tiina -right side-
 19 Sally -right side of his leg

A co-produced summary attempt.

from what has been discussed so far, illustrating that Tiina is familiar with the interactional norms and the ways of claiming epistemic primacy in this context. In this case, however, Tiina's utterance includes a string of mitigation markers (sound stretches; short pauses; repetitions; and self-repair) in lines 1–3, until she finally quits her turn. Content-wise, Tiina does not manage to summarise any of the expected components mentioned in the previous excerpts (mechanism of injury; patient's status; action plan). Used in this way, three times in lines 1–3, combined with a series of short pauses and elongation, *so* functions as a hesitation marker, rather than a successful summarising marker as was the case in all previous examples. This does not mean that the success of the summary solely depends on the DM. Linguistic features constitute cues that create cumulative meaning in the situated moment of the interaction. It is, however, a good illustration of the consistency of the patterns identified in the dataset, in which structured, uninterrupted summaries are launched with *so*, whereas this is not the case in instances with interactional trouble.

It is evident that Tiina's and Mike's attempt to possibly distribute leadership does not lead to the intended result here, as Tiina is perceived as uncertain and seems to struggle to gain control of the situation and the team. Her attempt to position herself in a leadership position and bring the team together with a *so*-prefaced utterance is unsuccessful, as illustrated in the team's uptake: in contrast to the other excerpts, throughout Excerpt 5 we notice overlaps (line 12), interruptions (lines 11, 18, 19), and team members' contributions after Tiina's abandoned utterances (lines 4, 17): this is a case in which staff members do not abide by a senior member's attempted epistemic claims.

Mike, on the other hand, even though he is not the one initiating the summary, manages to summarise patient's condition (lines 4, 6, 8–10, 12–14; marked with an arrow in the excerpt), even though in a fragmented way, in contrast to all previous excerpts (remember that Mike is the most senior member in the team). The summarisation process, therefore, is eventually accomplished despite the trouble which, as fieldnotes suggest, is manifested throughout the emergency. Staff members' struggle to 'come together' and operate as a whole was manifested in the material space, too, as smaller groups of staff members worked separately in different material zones of the room throughout the emergency. The group does not take the spatiolinguistic positions which would allow a successful negotiation of epistemic rights.

In excerpt 5 *so*, even though at the beginning of the utterance, does not function as a turn-managing marker, but rather, as a hesitation marker. More broadly, we argue that interactional trouble is spatiolinguistic; we see it here in the failure to achieve alignment, the fragmented turn and the spatial design.

Taken together, the excerpts show the visible and systematic function of *so* in launching summaries and managing summarising throughout the episode. Members appear familiar with the summary act and mobilise it to *do* leadership. This does not imply, however, that anyone using established tools for epistemic claims is legitimised to do so and/or that they are the sole mechanisms for team leaders to claim epistemic rights in the context. In the methodology, we made a case for the need to consider the context in the investigation of DMs' use. Access to the organisational context (institutional roles and seniority levels) is necessary to zoom out of the situated interaction and capture differences in the use of *so* and their impact on the encounter.

We summarise our findings in the next and last section.

5. Discussion

Despite the extensive body of work on DMs, which has significantly advanced our knowledge of their formal properties, the situational context in which the specific properties of DMs are mobilised systematically for core organisational processes, remains less explored. Against this backdrop and taking an IS approach which allows the investigation of both the micro- and macro-context, we focused here on the role of *so* specifically in introducing summary points as concrete discourse acts and

mobilising the interactional conditions for negotiating epistemic positions in and through the process of summarising. An important component of our analysis zoomed in on the multimodal dimensions of DMs, addressing a critical gap in the literature. We have shown how the use of *so* can only be captured in the situated spatiolinguistic context of the team doing summarising as part of doing role performance. Fig. 1 below provides an overview of the framework that we proposed and illustrated through our data from medical emergency contexts.

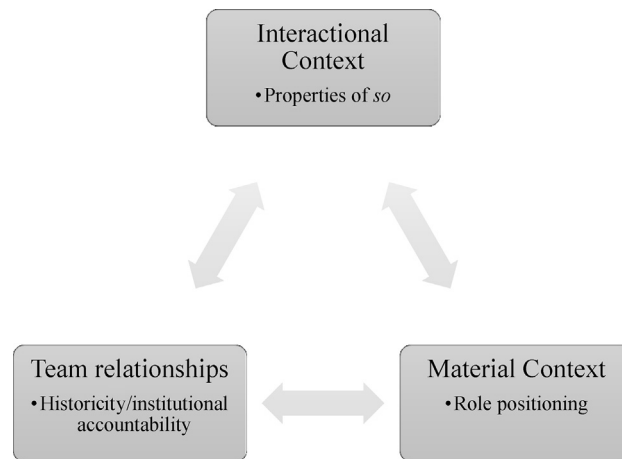


Fig. 1. Core ingredients in doing summarising.

In further detail, our analysis shows that *so*-prefaced summaries are one of the core discursive strategies of team leaders for indexing epistemic primacy in our data. Work on epistemic phenomena is concerned with *who* can do *what* *when*: we illustrated how only certain members are legitimised to summarise crucial information for the team in our high urgency, hierarchical trauma context, and the ways in which by doing *so*, they place selves in a position of power (Excerpts 1–4). This, in turn, can be reaffirmed or disputed by the rest of the team. We have argued that summaries form temporal units in the summarisation process which is part and parcel of leadership negotiation. They are concrete acts, mobilised by those in positions of power in the process of performing their role: this is particularly relevant to the medical context which comes with certain medicolegal responsibilities assigned to the team members. The process is enacted spatiolinguistically.

Our discussion of *so*'s multimodal properties illustrates how, in prefacing summaries, it initiates a shift to teams' positioning in the material space, bringing all staff members together. In examining *so*'s multimodal performance, we showed how unsuccessful epistemic claims are also manifested in the spatiomaterial/spatiolinguistic context of the emergency room (Excerpt 5), demonstrating the systematicity of our multimodal claims. A core pillar in the teams' performance is the participants' interpersonal relationships: although this introduces evident variability, we have shown the stability of the patterns identified in our data. From this perspective, then, looking into summarising provides a useful addition in the study of professional discourse and leadership, particularly in hierarchical/high risk contexts, such as the one we report on here.

In closing, our work has the potential to inform clinical practice and feed into both training and recommendations for improving healthcare teamwork. Summarising in particular is both visible and already included in medical curricula: this is an opportunity for interactional research and social science research more generally to come closer to medical education and clinical training. DMs are a good case of significant evidence which can travel further out from linguistic scholarship. Our findings illustrate the use of DMs as an integral part of team leaders' epistemic claims and performance of leadership and more broadly an approach that can further contribute to the transfer of findings of linguistic research to medical practice. We have introduced a framework here and we hope future studies will follow.

CRedit authorship contribution statement

Polina Mesinioti: Writing – review & editing, Writing – original draft, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Jo Angouri:** Writing – review & editing, Writing – original draft, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Chris Turner:** Writing – review & editing, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

None

Data availability

The data that has been used is confidential.

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Appendix

Transcription conventions

[Overlap onset.
(.)	Pause shorter than 0.5 s.
(X.0)	Pause about X s.
(())	Notes.
-	Interruption.
:	Sound stretching.
(word)	Uncertain transcription.
word	Emphatic speech.
↑	Questioning intonation/rise in pitch.
↓	Falling intonation.

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