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Houston, We've Had a Problem

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Key words: Apollo 13; factual discourse; epistemic authority; social remembering; discourse analysis

Abstract: It is 50 years since the Apollo 13 mission failed to reach the surface of the moon. In this article we examine the audio recording of the post-mission press conference from the Apollo 13 spaceflight. We will focus on the "problem" (an explosion on-board the spacecraft) that prevented the astronauts (Jim Lovell, Jack Swigert and Fred Haise) from reaching the moon and we will analyse how their retrospective talk organises "what happened" and "what we did" in their recollections of the events surrounding the explosion. In the analysis we identify how these accounts are discursively organised in such a way that the explosion is positioned as an external event that was unavoidable and unexpected. Furthermore, the astronaut's responses to witnessing this unexpected event and their subsequent actions on realising the severity of the event are constructed as being measured, rational and logical.

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1. Introduction

02 07 53 12	CMP (Jack Swigert)	Okay. Stand by.
02 07 55 19	LMP (Fred Haise)	Okay, Houston - -
02 07 55 20	CMP (Jack Swigert)	I believe we've had a problem here.
02 07 55 28	CC (CAPCOM)	This is Houston. Say again, please.
02 07 55 35	CDR (Jim Lovell)	Houston, we've had a problem. We've had a MAIN BUS B UNDERVOLT
02 07 55 42	CC (CAPCOM)	Roger. MAIN B UNDERVOLT
02 07 55 58	CC (CAPCOM)	Okay, stand by, 13. We're looking at it.

Table 1: Official transcript of the Apollo 13 Technical air-to-ground voice transcription, Apollo Space Program Office, NASA, April 1970. [1]

The above table shows the official transmission between the Apollo spacecraft and the mission control space centre in Houston during the Apollo 13 spaceflight. It is a recording of the highly publicised moment where the crew state "Houston, we've had a problem". All three astronauts are included in this communication: Fred Haise first alerts Houston to there being an issue ("Okay, Houston"), Jack Swigert then alludes to the possibility of a problem ("I believe we've had a problem here") and Jim Lovell confirms the situation ("Houston, we've had a problem"). Whilst this one utterance has become exceptionally well known, examining it in context indicates something of the subtleties of the collective process of this communication. This brief extract alone is also suggestive of issues such as "*who gets to do the telling"* (captain Jim Lovell repeats the announcement that command module pilot Jack Swigert made) and "*what details are given"* (Jim Lovell's announcement of "a problem" is followed by a more detailed technical specification). In this article, we investigate some of the issues that are involved in the organisation of "factual discourse" of unexpected events, by examining the press conference that the three astronauts gave following their safe return to earth. [2]

We begin by describing the Apollo 13 mission details and the circumstances surrounding the explosion (Section 2). Then, we introduce the sample of astronaut talk examined in this study (Section 3). In the analysis (Section 4), we highlight the ways that the astronauts account for their actions out in space and consider the factual construction of their accounts. Finally, we offer some reflections on the discursive features of this talk and consider further opportunities to analyse talk surrounding unexpected events of this kind (Section 5). [3]

2. Apollo 13

2.1 The mission

Apollo 13 launched on 11th April 1970 without any major issues and the crew of the Apollo flight left the earth's atmosphere on a trajectory towards the moon. However, the mission had to be aborted after 56 hours when there was an explosion in one of the oxygen tanks in the service module. The explosion caused substantial damage and eradicated any possibility of landing on the moon, producing a situation where the astronauts would have to preserve enough "consumables" (primarily fuel and oxygen) in order to survive the journey back to earth. The explosion was accompanied with a loud bang, which was audible to the crew members on board. The implications of the bang were not immediately apparent from the instrumentation on the spacecraft and it was only when one of the astronauts (Jim Lovell) noticed considerable "venting" coming out of the side of the spacecraft that the full scale of the occurrence became apparent. Once the astronauts (and mission control) realised that they were not going to make it to the moon NASA decided to "sling-shot" the spacecraft around the moon using the moon's gravitational pull as a form of propulsion, combined with a number of well-timed "burns" (which were used to correct the spacecraft's return trajectory) in order to leave the crew with sufficient fuel to get home. On returning to earth, the explosion was identified as being caused by an electrical failure triggered during the routine process of stirring the oxygen tanks. In this article, we explore the way that the three astronauts recount their experiences of these events at the post-mission conference that took place on April 24th 1970. We examine the way that they construct their experiences of where they were and what they were doing in the moments leading up to hearing the unexpected explosion and how they responded to this event as they became aware of its severity. [4]

In this article we purposefully diverge from social cognitive approaches in psychology that often employ attributional theories to explain reactions to unexpected events. Research in attribution has focused on how people try to locate the "causes" of events (HEIDER, 1958). For example, we could draw on KELLEY's (1971) covariation model to identify what factors "co-vary" with the event to be explained i.e., we would attribute a casual explanation to either a "situational" (external) or "dispositional" (internal) explanation. Alternatively, we might consider how the astronauts' attributions reflects a self-serving bias, which might be especially salient given the environment in which someone might potentially be held to account for the explosion (CAMPBELL & SEDIKIDES, 1999). Though different in many important respects, these attribution approaches share a common focus on the cognitive activity of the individual trying to make sense of the event. That is, the common interest here is what does the individual person trying to make sense of the event (by locating its cause) do *cognitively.* As argued below, this approach has been directly challenged by discursive psychology (EDWARDS, 2005; EDWARDS & POTTER, 1992; ROBINSON, 2017), which places cognitive activity in parenthesis and focuses instead on the manifest talk of those involved. [5]

2.2 Examining factual discourse

Discursive psychology offers an analytic gaze, or framework, that has been brought to bear on a vast range of different talk data, although the emphasis on examining "*what the talk is doing"* has led some to question the utility of examining researcher generated data such as "traditional" researcher interviews with participants (POTTER & HEPBURN, 2005). From a discursive perspective, spoken accounts build on a collectively shared set of linguistic resources and typically include some form of social action or accomplishment (EDWARDS & POTTER, 1993). Constructions of an event are far from being simply concerned with the transmission of information and can instead be examined in terms of a wide range of potential *interactional* concerns to which they may orientate. This could include the accountability, which—*in the very act of description*—addresses issues such as who is to be held accountable for what has happened (EDWARDS & POTTER, 1992). It could also include the ways in which speakers attend to the veracity of their talk and specifically their own and each other's epistemological authority. This is particularly relevant in cases where the talk not only involves factual discourse of past events, but, more specifically, factual discourse concerning an unexpected event. WOOFFITT (1992, 2006) provides a sustained analysis of the way in which unexpected events (typically in terms of paranormal experiences) are constructed, noting that people reporting paranormal activity will often comment on the *ordinary nature* of events prior to the paranormal experience. WOOFFITT (1992, p.105) refers to this prefacing activity as "I was just X when Y" whereby the description of the paranormal experience (Y) is prefaced with an account of the mundane activities (X). In the following example, we can see "S" (anonymised name of the participant) using an example of the "X when Y" device. In this extract the numbers in brackets relate to the length of a pause between two words and where pause that are too short to be measured (typically less than 0.2 seconds) are represented as "(.)".

> "S: an' I went in there (.) er:m w- with my mother in law and uhm: (.4) friends that were with me (1.3) hhh (.) and I was just looking at the coffin and there was David standing there (.3) he was in Blues (1) hh he wasn't wearing his hat his hat was on the coffin and he was *there*" (WOOFFITT, 1992, pp.123-124). [6]

The contrast between the usual X ("I was just looking at the coffin") and the unusual Y ("and there was David standing there") constructs the unexpected intrusion into the speaker's world as something that could not be avoided and where the contrast between X and Y serves to illustrate the unforeseen nature of the incident. Due to the ordinary aspects of X and the subsequent unexpected occurrence of Y, this way of constructing past events gives weight to the extraordinary qualities of an event and to the speaker's ability to recognise the unusual context in which the event has occurred. Furthermore, this device situates the unexpected event as not of the speakers' own making. WOOFFITT's analysis illustrates the way that talk about paranormal experiences can orientate to issues of potential audience scepticism by using the "I was just doing X when Y" device. The specification of the activity and context prior to the paranormal occurrence and the construction of these in mundane terms can be seen as

accomplishing an unmotivated encounter with the paranormal. This shows how the paranormal encounter intruded into the normal course of everyday activities—rather than being in any sense "looked for", "expected" or "consistent" with the unusual nature of the prior context and activities of the speaker (see also CHILDS & MURRAY, 2010). [7]

The discursive use of "script formulations", similar to the "X when Y" device, have been found to be present at the site of organising factual discourse (EDWARDS, 1995). Script formulations are explanations of an event that have a predictable sequential pattern and that speak to a sense of normative order. Through the use of script formulations people speak about the factual status of an event so that later actions do not require further evidence of their existence (SNEIJDER & TE MOLDER, 2005). Therefore, the use of script formation can accomplish interactional work such as exoneration, blame, affiliation and establishing epistemic authority (RIAZ, BUCHANAN & RUEBOTTOM, 2016). From this perspective, the retrospective constructions that the astronauts provide of the explosion on the Apollo 13 spacecraft becomes a rich terrain for investigating the ways in which factual statements are handled in the constructions of past events. [8]

3. The Data

The Apollo 13 post-mission conference was publicly released in 2010 as part of the 40th anniversary of the mission. The data is stored on a DVD and is available with the official NASA publication of the Apollo 13 mission (GOODWIN, 2010). The conference recording is 75 minutes long and the following analysis focuses on the first 12 minutes of the conference (as this is when the astronauts discuss hearing the explosion). The conference takes place in a large theatre and each of the astronauts is seated at a desk on the stage. They are initially introduced by a NASA representative and then Jim Lovell leads the direction of the conference. All speech has been transcribed using a modified version of the JEFFERSON (2004) transcription system (see the Appendix). Analysing the talk from the post-mission conference is comparable with a wealth of research in discursive psychology that examines publically available talk such as political speeches and public debates. [9]

We analysed the post-mission conference using discourse analysis. Initial stages of the analysis coded the transcript for evidence where the talk was achieving an interactional accomplishment. These codes were then collected into themes. Each theme was designed to capture the sense of the codes and of the social actions that are being constructed. Discourse analysis focusses on the performative functions of talk and is keen to identify what people are trying to *do* with their talk (EDWARDS & POTTER, 1993; KOROBOV, 2018; POTTER & WETHERELL, 1987; TUCKER, 2009). The analysis focussed on how the astronauts constructed their collective experiences of the explosion and their responses to it. What is important here is not the factual accuracy of what each astronaut said and whether this relates to the actions on board Apollo 13, but the subtle discursive actions embedded in the way the event is described and

communicated. The first extract is taken from Jim's version of the events, and the other astronauts' comments follow. [10]

4. Analysis

4.1 Constructing location on the spacecraft

> Jim: I guess the show lasted >for about a< *half an hour* (1.0) and- (.) just-(.) *a*fter we had turned off the came↓ra (1.2) >Fred was still in the lunar module< (.) Jack was- back in the command module in the left-hand seat (.) and *I was*- (.) half-way in between in the lower equipment bay wrestling with TV wi*res* and a camera and watching (.) Fred coming on down (.) when all the three of us heard (.) a *ra*ther *lar*ge *ba*ng (.) °just-° just ↓one bang (0.6) now↑ *before* that (.) Fred being in the lunar module had actuated a *valve* which *nominally* gives us that same (.) *sound* (.) and since he didn't tell us about it we all rather *jum*ped up and we >°all sorta worried about it°< (.) but (.) it was his joke and ((cough)) we all thought it was a lot of fun at the time since nothing happened (.) so when *this* bang *came* (.) we really didn't (.) e:r get con↑*cerned* right away but then I looked up at Fred (.) and Fred had that expression like (.) it wasn't *his* fault
>
> Audience: ((laughter))
>
> Jim: and (.) er we suddenly (.) realised that something else occurred but- exactly what we didn't kn↓ow (1.7)> I'd like to go on now< and let Fred and *J*↑↓*a::ck* explain what their impressions were at this very same instance that I heard the explosion in the lower equipment bay (.) jack?
>
> Extract 1. Jim 06:25 [11]

Extract 1 shows Jim accounting for each of their positions on the spacecraft. Jim uses a 3-part list (JEFFERSON, 1991) to describe each of their locations on the shuttle and uses a brief pause to separate each location/astronaut: "Fred was still in the lunar module (.) Jack was back in the command module in the left-hand seat (.) and *I was* half-way in between in the lower equipment bay". The use of this list acts to construct Jim as an authority on how this event is to be remembered, and in using the specifics of where each crew member was, Jim is able to segment the spacecraft in terms of the different mission-related locations. Thus we do not get an absence of specification, nor a (seemingly) redundant specification ("we were all aboard the spacecraft"). Furthermore, independent of the level of specificity, there is a choice of descriptor for Jack and Fred's location in terms of the role segmentation of the Apollo mission—not "front" or "back", some sort of temporally structured distinction "where we all were initially", or in terms of usage "where we did the broadcast" or "ate our freeze dried meals" but instead "lunar module" and "command module". These specifications further underscore the ability to form a script for how the event is to be collectively recognised. As a result, their actions are hearable in terms of their roles on the spacecraft. [12]

Having constructed the location of each crew member, Jim goes on to describe the details of what happened on hearing the bang. Jim states that "when all the

three of us heard (.) all the three of us heard a *ra*ther *la*rge *ba*ng". This statement shows the importance of the bang as a collective experience and is similar to the way speakers often describe the mundane features of the actions at the point at which something extraordinary occurs (WOOFFITT, 1992). Extract 1 also seems to contain some elements of this discursive device in the way that Jim takes some care to describe the location and the mundane activities of each of the three astronauts leading up to the bang. The descriptions then form the mundane X-type activities and the bang is situated as the unexpected quantity Y. Therefore, the bang is discursively amplified as being something unpredictable and subsequently outside of the astronauts' control. [13]

However, the current data offers a slight difference to the "X when Y" device. In this data, there is less likelihood of a sceptical reading of the unusual event "the bang" being described—but there is still a construction of prior context and activities. In the current example each astronaut is described in terms of being, or having been at a place in the spacecraft specified in terms of and consistent with their mission role and where their activity was detailed it was consistent with their role ("Fred was still in the lunar module ..." etc.). What seems to be at work here is that the specification of X attends to accountability that locates each astronaut in an appropriate place and as implicitly involved in some activity consistent with that place or role. Prior to describing the bang, then, the specification of antecedent locations and activities provides some sense of each being accountably doing what they should be doing. The unusual and destructive event is thus implicitly positioned as an intrusion into, rather than in any sense arising out of, their prior activity. [14]

In addition to specifying the prior context to the core phenomenon of the bang—we find that each of the astronauts constructs an initial interpretation (that was less catastrophic and typically minimising) prior to a subsequent realisation of the threatening nature of the event. Thus Jim refers to the prior actions by Fred that had given rise to a false alarm and how he and Jack interpreted the target bang being described as another case of Fred's "joke". As Jim states: "now *before* that Fred being in the lunar module had actuated a *valve* which *nominally* gives us that same (.) *sound* (.) and since he didn't tell us about it we all rather *jum*ped up and we °all sorta worried about it° but it was his joke". The emphasis here is that the interpretation was rational and measured, rather than reflecting any sort of nervous over-reaction ("we really didn't get concerned right away"). However, this assessment of the situation changes as Jim describes looking to Fred and where "Fred had that expression like it wasn't his fault". This replaces the initial minimal consequences interpretation with a more serious realisation. Jim then states that "we suddenly realised that something else occurred but exactly what we didn't know". This subsequent realisation is constructed as a measured response where there was awareness of not knowing instead of a process of jumping to catastrophic conclusions. The astronauts recognised there was a problem and carefully considered what that might be. [15]

Throughout this narrative, Jim is orientating to a joint construction of this position through the repeated use of the pronoun "we" (i.e., "we suddenly realised that

something else occurred but exactly what *we* didn't know"). Joint remembering functions to sequentially co-opt others into taking a position on what should or should not be happening (MIDDLETON, 1997; MIDDLETON & BROWN, 2005; WERTSCH, 2002). Therefore, Jim is positioning the memory of the event as a collective practice, as something "we" experienced, and as such it acts to co-opt the other crew members into reconstructing the memory of the event in a similar way. In the final section of Extract 1, Jim offers the other crew members the opportunity to give their comments on what they thought and felt in terms of the bang ("I'd like to go on now< and let Fred and *J↑↓a::ck* explain what their impressions were at this very same instance that I heard the explosion in the lower equipment bay (.) jack?"). What is particularly noteworthy is that this opportunity is not set up as an opportunity for clarification or explanation for what Jim has just discussed, but rather as an opportunity for each of the crew members to give their subjective views on what happened. This is clearly built on an understanding that shared accounts provide a pervasive, factual status to the accounts. However, the accounts are not fully allowed to adopt their collective status as the astronauts are only given permission to speak one at a time. Given this distinction, the descriptions of the event still seem to maintain their collective ability to co-constitute their actions and even with the slightly unnatural organisation of the interaction there is a performance of their intersubjectivity. The following extract is taken from Jack's version of the event: [16]

4.2 Signs of warning

> Jack:°ok° ((clears throat)) °s'cuse me° (1.2) e::r (.) the sensation I had (.) er that I had felt a vibration accompanying (.) the bang (.) er (.) not a *larg*e vibration °> or shudder<° (.) er (.) I er *proce*eded to e::r look at er Jim and e::r (.) and er about the *same time* which (.) I guess about *two* seconds had elapsed when I had master alarm and er a *main* bus b under volt light (.) er I transmitted to *Hou*ston that we had a *prob*lem and proceeded to (.) over on the right hand side of the space craft to look at the voltage (.) er (.) the voltage at that moment was completely *nor*mal (.) the current was *not high* (.) and the fuel cell flows where normal which indicated to me that .hh whatever it was it was some sort of a *tran*sient that e::r that didn't exist at that ↓time (.) e::r (.) it (.) me being a command module *pilot* and e:r and the source the er (.) of the bang (.) e::r not *immediately determinable* er it was my thought that uh (.) of course I had a little more confidence in the command module so I thought it occurred *in the LM* so I said let's get the *hatch in here* and er and e::r so we can sit back and think about it and we had the *tunn*el *op*en at this time and I thought we might be vulnerable to losing pressure .hh (.) so I proceeded to get the hatch in (.) e::::r (.) *begin* installing the hatch and at that time *Fre*d went back over to the e::r lunar module pilot couch and I'll let him tell what uh his observations where (.) as far the instruments and the other caution warning alarms
>
> Extract 2. Jack 07:45 [17]

Extract 2 shows Jack's comments on his experience of the bang. Jack uses a high amount of technical language (e.g., "a *main* bus b undervolt light") that matches Jim's earlier comments. Where Jack realises they are in serious trouble,

he explains his movements as: "I er *proce*eded to e::r look at er Jim". Where many people might be permitted the opportunity to shout, scream, swear or panic at a moment like this, Jack describes how he simply proceeded to "look at Jim". This marks the unwavering connection between Jack and his captain and shows discursive evidence of a script formulation (EDWARDS, 1995) in that, for Jack, looking a Jim is *scripted* to imply some following action or intention (in that they were in trouble and that they needed to do something). It also acts to construct the joint moral character of the two astronauts and speaks to their competencies on board the spacecraft. Following this, Jack communicates the factual status of the event: "I transmitted to *Hou*ston that we had a *prob*lem". [18]

Jack describes how even though they had heard a bang that many of the instruments did not show any immediate signs of warning. Jack states that at the time of the bang: "the voltage at that moment was completely normal and the current was *not high*". The emphasis on the phrase "not high" extenuates the astronaut's credibility due to the way that they *knew* something was wrong even though the instrumentation suggested otherwise. Jack states that the bang was "some sort of a transient" and that it "didn't exist at that time". Therefore, Jack could get no confirmation or further information on the nature of the bang from the instrumentation at his disposal. In this section of the talk the astronauts and the spacecraft and constructed as *one*. It implies that they could *feel* that something was wrong but they were yet to find out what the problem was. Here the past actions are recounted in a way that privileges the role of the speaker and positions them as able to anticipate changes in the spacecraft. [19]

On feeling the bang, Jack comments on how he responded in terms of his command module pilot status: "being a command module *pilot* and uh the source er of the bang ... so I thought it occurred *in the LM* so I said let's get the *hatch in here*". This is a joke where he is saying let's seal if off and not worry about it, which is a view unlikely to be popular with the lunar module pilot, Fred Haise. He also states that he had "more confidence" in the command module and shows the customary association between the specific areas of the spacecraft to which he is assigned. In making these connections there is a sense that Jack, like Jim and Fred, did everything he could have done to counteract the impact of the bang. Therefore, Jack is able to protect against the possibility of a negative assessment by recounting the event in minute detail in a way that presents his action as associated with a distinct set of category-bound activities, that of the command pilot. [20]

As with the final moments of Jim's account of the incident, Jack closes his statement with by introducing Fred to a particular way of describing the events: "I'll let him tell what uh his observations where (.) as far the instruments and the other caution warning alarms". Again, this is not marked as an opportunity to check any of Jack's view on the event, more as an opportunity for Fred to give his *unique* view on the event. As with Jim's response, Jack also uses co-opt practices when closing his version of events. Fred is not simply invited to speak, but he is invited to speak to a highly specified version of their collective experience. [21]

4.3 Epistemic authority

> Fred: well uh .hhh well first of all due to my position being (.) a lot more familiar with the LM side of the house uh (.) my natural first impulse on feeling this er shudder (.) and er °explosion° was to er (.) make sure that the LM hatch (...) that was on the other main bus (.) and er (.) this induced a voltage on the other main bus (.) and er (.) that's where I got a little smarter and er (.) thought maybe I would look at the other Fuel Cells which I hadn't even considered us having had a problem (.) and I found Fuel Cell 1 also er (.) not outputting any amps (.) er (.) from this point on we were kinda under the hands of Houston and er (.) further troubleshooting looking at a few more dials down on another meter and a LAB to look at the regulated pressures and eventually we got to the point where ah Houston eh called up and uh asked to shut down Fuel Cell 3 (.) shut down the reactance valve (.) and uh (.) I asked for reconfirmation since when you do that it is sorta irreversible if you shut one of these down they can only be restarted from ground support equipment and uh (.) they assured me that they really meant it (.) so (.) uh so I went through with it and subsequently the same command was given for Fuel Cell 1 (.) about this point in time the cryopressure (.) the oxygen levels had gone in cryotank 2 and the pressure in cryotank 1 was steadily (.) slowly (.) steadily decreasing (.) it was obvious that it wasn't holding its own (.) and er (.) right about then it quite apparent to me it was just a matter of time until the command module was gonna be dead (.) we were gonna lose that fuel cell also (.) so I kinda lost interest in that position and headed for the LM (long pause) (laughs)
>
> Extract 3. Fred 09:28 [22]

Extract 3 begins with Fred making a reference to his specific role on the spacecraft and his actions at the point of hearing the bang. Fred states that: "due to my position being (.) a lot more familiar with the LM side of the house uh (.) my natural first impulse on feeling this er shudder (.) and er °explosion° was to er (.) make sure that the LM hatch (...) that was on the other main bus (.) and er (.) this induced a voltage on the other main bus". This shows how he recollects his actions on hearing the bang as being interactionally tied to his role as Lunar Module pilot. Fred explains how he tried to test the voltage on the other main bus and how his actions related to the LM "side of the house". This shows an orientation to his reactions as being informed by the specific needs of his role as a LM pilot and connects with the same way that the other astronauts explained what they heard. This could be described as connecting with a collective sense of epistemic authority. [23]

HERITAGE and RAYMOND (2005) note that epistemic authority concerns "the management of rights and responsibilities related to knowledge and information" (p.16). These epistemological concerns involve not simply implicit or explicit claims regarding any one speaker's rights to speak authoritatively on a given matter, but also, and crucially, the interactional management of the relative rights of different speakers to speak with authority on a matter. Thus, for HERITAGE and RAYMOND, speakers might not only seek to build their epistemic credentials for a given matter on which they talk but may also find ways of attending to

competing and unequal claims to knowledge (see also ENOKSEN & DICKERSON, 2018; RIAZ et al., 2016). In the above extract Fred articulates the distinct sphere of his epistemic authority as being with the "LM side of the house". This not only positions him as having expertise with that part of the spacecraft but also usefully emphasises the segmentation already present in the order in which the three astronauts speak. Fred's initial talk therefore could be seen as orientating to potential issues with a competitive knowledge claim by circumscribing his authority as related to the LM rather than the spacecraft, or mission, as a whole. [24]

Subsequently Fred does engage in talk that could be seen as addressing his own distinct claim to speak on these matters, detailing as it does the immediate awareness that he had of the situation. For example, Fred does not use the expression "the bang" to describe the incident and instead defines the incident as a "shudder" and "explosion". Fred also describes his experience of looking for any signs of voltage on the other LM and here he describes how he "got a little smarter" in relation to the amps in the different fuel cells. This constructs a position where he connects with the localised expertise, while also at the same time demonstrating an awareness of the situation that is distinct from the other two astronauts. Fred does not talk about the mission or the spacecraft in general terms (which would go against Jim and the group epistemic authority) but is still able to perform his connection to the group by specifically talking about the Lunar Module. This allows Fred to commit to the performance of a collective authority while at the same time showing his own specific knowledge on the subject. [25]

A further example of this ability to demonstrate an individual sense of authority is to upgrade the rights of the first speaker. For example, Fred upgrades his description of what happened through his commentary of the decision to shut down Fuel Cell 3 (a specific topic also discussed by Jack). Fred describes that it is "sorta irreversible if you shut one of these down". In stating this fact he is able to ramp-up the sense of his individual conceptualisation of the danger due to his further knowledge on the problem. This shows how Fred builds in his own form of epistemic authority that does not serve as a challenge to the earlier speaker. [26]

5. Discussion

Traditionally, given an event of this kind, social psychology would explore the way that each of the astronauts could account for their actions in terms of a causal attribution of the unexpected events (e.g., which could include either a "personal" or a "situational" explanation). This would conceptualise the response to their actions upon hearing the bang as a cognitive function, one that uses the information available in order to provide an explanation of the reactions to the event. Alternatively, in this article we have focussed on the interactional significance of the act of re-telling the events surrounding the explosion. This has looked to explore the way that facts of what happened have been collectively organised and communicated. [27]

In our analysis, we identified three main themes in terms of the astronauts' recollections of witnessing the explosion: 1. how the discussion of their location on the spacecraft served as a way of communicating the unanticipated nature of the bang and reified their actions leading up to the incident; 2. how the subtle organisation of the recollections of their initial reactions structured the way the event was to be remembered by a wider audience; and 3. how each astronaut tried to construct their own sense of epistemic authority while still maintaining their connection to the accounts as performed by the other astronauts. [28]

In examining the discursive aspects of unexpected events, we can recognise how subtle practices in talk are committed to the performance of a collective memory of the event, in which speakers are able to speak to responsibility and accountability. Each of the extracts showed an attempt to co-op to the next speaker into delivering a particular aspect of the events. In doing so, this situated the following speaker as tied to that particular activity (such as "the warning alarms") and as responsible to continue the narrative in a similar direction. The prevalence of an epistemic authority represent those moments where an individual is able to pursue an individual aspect of the experience while keeping within the confines of the collective narrative. The findings could be applied to other "national disasters" or other unanticipated events and provide a way of critically examining the collective process through which these occurrences become "known" and "remembered". This avoids individualistic interpretations as is popular in social cognitive psychology and focusses on the join production of the memory of an event. [29]

In conclusion, we can see that the past was very much alive in the moments around re-telling these events and that the astronauts were careful to produce their version of the events in order to resist any claims of blame or responsibility. This research was shown to match other ways of producing factuality in everyday accounts and issues involving the collective construction of certain "truths" (CHILDS & MURRAY, 2010). Future research should look for evidence of how other unexpected events are recalled and remembered. [30]

Appendix

The transcription system is standard for discursive analysis and other interactional studies. The symbols are as follows (full details on these symbols can be found in JEFFERSON, 2004):

[]	Square brackets mark the start and end of overlapping speech
↑↓	Vertical arrows precede marked pitch movement
Underlining[1]	Signals speaker's emphasis
CAPITALS	Marks speech that is obviously louder than surrounding speech
°I know it°	Degree signs enclose obviously quieter speech
(.8)	Numbers in round brackets measure pauses longer than 0.2 seconds
(.)	A pause of 0.2 seconds or less
((text))	additional comments from the transcriber
:::	colons show degree of elongation of the prior sound; the more colons, the more elongation
hhh	Aspiration (out-breaths)
hhh	Inspiration (in-breaths)
Ye:ah,	commas mark weak rising of "continuing" intonation
Ye:ah.	Full stop marks falling or "completing" intonation
?	Question mark signals questioning intonation, irrespective of grammar
><	less than and greater than symbols enclose speech that is noticeably quicker than the surrounding talk
=	Equals signs mark the latching of one element of the talk to another.

1 In *FQS* italics.

References

Campbell, Keith W. & Sedikides, Constantine (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology*, *3*(1), 23-43.

Childs, Carrie & Murray, Craig (2010). "We all had an experience in there together": A discursive psychological analysis of collaborative paranormal accounts by paranormal investigation team members. *Qualitative Research in Psychology*, *7*(1), 21-33.

Edwards, Derek (1995). Two to tango: Script formulations, dispositions, and rhetorical symmetry in relationship troubles Talk. *Research on Language and Social Interaction*, *28*(4), 319-350.

Edwards, Derek (2005). Discursive psychology. In Kristine L. Fitch & Robert E. Sanders (Eds.), *Handbook of language and social interaction* (pp.257-273). New York, NY: Lawrence Erlbaum Associates.

Edwards, Derek & Potter, Jonathan (1992). *Discursive psychology*. London: Sage.

Edwards, Derek & Potter, Jonathan (1993). Language and causation: A discursive action model of description and attribution. *Psychological Review*, *100*(1), 23-41.

Enoksen, Anette Einan & Dickerson, Paul (2018). "That proves my point": How mediums reconstrue disconfirmation in medium-sitter interactions. *British Journal of Social Psychology*, *57*(2), 386-403.

Godwin, Robert (2010). *Apollo 13 NASA mission reports* (40th Anniv.). Burlington, VT: Apogee Books.

Heider, Fritz (1958).*The psychology of interpersonal relations*. New York, NY: Wiley.

Heritage, John & Raymond, Geoffrey (2005). The terms of agreement: Indexing epistemic authority and subordination in talk-in-interaction, *Social Psychology Quarterly*, *68*, 15-38.

Jefferson, Gail (1991). List-construction as a task and resource. In George Psathas (Ed.), *Interactional competence* (pp.63-92). New York, NY: Irvington.

Jefferson, Gail (2004). A note on laughter in "male-female" Interaction. *Discourse Studies*, *6*(1), 117-133.

Kelley, Harold (1971). *Attribution in social interaction*. New York, NY: General Learning Press.

Korobov, Neill (2018). Indirect pursuits of intimacy in romantic couples everyday conversations: A discourse analytic approach. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *19*(2), Art. 21, http://dx.doi.org/10.17169/fqs-19.2.3012 [Accessed: April 11, 2019]

Middleton, David (1997). The social organization of conversational remembering: Experience as individual and collective concerns. *Mind, Culture and Activity*, *4*(2), 71-85.

Middleton, David & Brown, Steven D. (2005). *The social psychology of experience*. London: Sage.

Potter, Jonathan & Hepburn, Alexa (2005). Qualitative interviews in psychology: Problems and possibilities. *Qualitative Research in Psychology*, *2*(4), 281-307.

Potter, Jonathan & Wetherell, Margaret (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. London: Sage.

Riaz, Suhaib; Buchanan, Sean & Ruebottom, Trish (2016). Rhetoric of epistemic authority: Defending field positions during the financial crisis. *Human Relations*, *69*(7), 1533-1561.

Robinson, Rebecca (2017). Is "attribution" constructed within and throughout discourse. *EC Psychology and Psychiatry*, *4*(2), 68-72.

Sneijder, Petra & Te Molder, Hedwig (2005). Moral logic and logical morality: Attributions of responsibility and blame in online discourse on veganism. *Discourse & Society*, *16*(5), 675-696.

Tucker, Ian (2009). "This is for life": A discursive analysis of the dilemmas of constructing diagnostic identities. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *10*(3), Art. 24, http://dx.doi.org/10.17169/fqs-10.3.1376 [Accessed: February 10, 2016].

Wertsch, James (2002). *Voices of collective remembering*. Cambridge: Cambridge University Press.

Wooffitt, Robin (1992). *Telling tales of the unexpected: The organisation of factual discourse*. Hemel Hempstead: Harvester Wheatsheaf.

Wooffitt, Robin (2006). *The language of mediums and psychics: The social organisation of everyday miracles*. Aldershot: Ashgate.

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