Person reference as a trouble source in dysarthric talk-in-interaction

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Introduction

This chapter provides an analysis of talk between people with acquired motor speech disorders (dysarthria) and family members. Using conversation analytical principles it focuses on how *person references* are treated as trouble sources in everyday interaction, how they arise and are collaboratively managed. Following a review of relevant literature we present a detailed examination of person references produced by people with dysarthria in conversation with family members. We will show that person references are vulnerable to becoming trouble sources given their potential ambiguity or relatively weak relationship to immediately prior talk. We will then discuss some of the reasons why names might be prone to difficulties in conversation. Finally, we consider the potential implications of this work.

Amyotrophic lateral sclerosis (ALS) is an acquired progressive neurological disorder, and is the most common form of what is often referred to as motor neurone disease (MND). People with ALS, typically between the ages of 40-70, develop weakness and spasticity of muscles and, over time, become increasingly paralysed. The majority report initial symptoms in their limbs but approximately 30% experience initial changes in the bulbar region, resulting in speech deterioration (dysarthria). Regardless of initial location of symptoms, over time all areas of the body are affected. Overall, it is reported that dysarthria occurs in 80–95% of people with ALS (Tomik and Guiloff, 2010), with speech remaining adequate on average for 18-

months from the first bulbar symptoms (Makkonen *et al*. 2017). Speech symptoms are typically a mixed spastic-flaccid dysarthria characterised by reduced articulatory range, phonatory-weakness, hypernasality and slow speech (Tomik *et al*. 2015, Lee *et al*. 2018).

Repair in conversation

Repair refers to practices used by participants to manage troubles in talk (Schegloff *et al.* 1977; Schegloff 2000). The term *trouble source* describes what participants themselves identify as problematic during their own conversation. These troubles are typically the types of problems encountered in everyday conversation through unclear speech sounds, misunderstandings etc. Repair takes place in two stages: initiation (i.e. displaying something in the prior talk as a trouble source) and outcome (i.e. what may be called the repair itself). In two party conversation, participants involved in repair may be just the speaker of a trouble source (e.g. altering a word in progress), the recipient of the trouble source turn, or both.

Of interest here is the practice of other-initiated self-repair (Schegloff *et al.* 1977) where both participants are involved. One participant (person B) treats something in another participant's (person A's) turn as a trouble source by other-initiating repair on it. Regularly, though not always, the other-initiation of repair (OIR) functions to highlight some difficulty participant B is having in understanding participant A's turn (Schegloff, 2007). There are a number of forms this repair initiation might take, including an *open class* repair initiator such as 'huh?' (Drew, 1997), or a repair initiator which displays which part of the prior turn is the trouble source (e.g. 'you told him when?'). Participant A then carries out a repair on their prior talk which has been highlighted as problematic. The success of participant A's self-repair attempt will be seen in the fact that on its completion participant B produces no further other-initiations of repair but rather produces a turn in which s/he explicitly or implicitly displays an

understanding of the previously problematic turn.

Schegloff (1979) notes that in normal conversation, the practice of repair is designed for success and usually, although not invariably, a single repair effort resolves the trouble it addresses. Thus, repair is an essential, and often collaborative, practice which disrupts the progressivity of talk but at the same time is usually done in a way which minimises that disruption.

Troubles and repair in dysarthria-in-interaction

The functional consequence of dysarthric speech is reduced intelligibility. This equates to a potential increased incidence in troubles and repair sequences relating to speech sound production (Rutter, 2009), some of which prove to be extended (Bloch and Wilkinson, 2013, Griffiths *et al.* 2015). Trouble sources identified by a recipient using other-initiation of repair are a regular feature of conversations featuring speakers with dysarthria (Bloch *et al*. 2015, Bloch and Wilkinson 2004; 2009; 2011). It has been established that whilst dysarthric troubles in conversation are typically underpinned by unintelligible speech, the problems that recipients experience in these conversations can been described more generally as problems with *understandability* (Bloch and Wilkinson, 2004). This refers to difficulties perceiving how a turn is constructed in relation to the previous talk and points to an important distinction between treating a prior turn, or element within that turn, as intelligible and treating it as understandable. For example, an important issue in a listener understanding a turn is that s/he grasps the sequential relationship between that turn and the turns immediately preceding it (Drew, 1997). This can be a problem for speakers with dysarthria and their recipients, even when utterances are produced using assistive communication systems such as SGDs (speech generating devices). In these cases, recipients may have difficulty understanding an SGD-produced utterance due to the fact that, even when each of the words is intelligible, slow production

means they cannot understand the sequential relationship between that utterance and what has preceded it (Bloch and Wilkinson, 2004, 2013). Further problems relating to the understandability of the speaker with dysarthria's turn can arise if the recipient fails to grasp what it is about the speaker's turn which is making it difficult to understand (Bloch and Wilkinson, 2009). This can lead to additional problems in completing the repair, with these problems intensified if in turn the speaker with dysarthria does not perceive that the recipient is having difficulty in understanding what the exact nature of the trouble is (Bloch and Wilkinson, 2009, 2013).

With reference to trouble resolution, many problems can be resolved promptly, particularly in cases where the recipient finds one particular word of the speaker with dysarthria's turn to be unintelligible. The speaker with dysarthria can then focus their efforts on making phonetic adjustments to the word(s) highlighted by the recipient as problematic (Rutter, 2009, Bloch and Wilkinson, 2011). In other cases the nature of the trouble source may be more global, potentially comprising several words but also revealing a wider difficulty with understanding the action of the talk (Bloch and Wilkinson 2011, 2013). In such cases the repair resolution can extend over several turns, addressing different elements of the problematic talk. Put together, the combined difficulties associated with intelligibility and understandability can create significant problems leading to lengthy sequences of talk that halt the conversation's progressivity.

Person reference in conversation

Person reference in conversation can be accomplished through a variety of means. For co-present participants it may be enough to signify 'I' and 'you' through eye-gaze or gesture, but there are a variety of forms used to identify non-present persons. These might be characterised, amongst others, as a person's name, a pronominal form, or a role (e.g. family or work

relationship) (Schegloff, 1996). Two key principles of person reference have been identified: (1) a preference for minimisation and (2) a preference, wherever possible, for using a recognitional reference form (Sacks and Schegloff, 1979). Minimisation states that person reference should be done using a single reference form (e.g., one name or one role rather than a name and a role). Recognitional reference forms are those that convey to the recipient that they ought to know, or know of, a particular person. Recognitional reference forms include names (such as first names, surnames) and recognitional descriptors (e.g., 'the man living opposite'). Referring to people using a first name alone (e.g., 'Simon') simultaneously satisfies the principles of recipient design and minimisation by making a known individual recognisable via a single word. In her collection of 219 instances of initial singular recognitional references to third persons, Stivers (2007) contends that if a name were possible it was used 93% of the time. Non-recognitional reference forms are used by a speaker to convey to the recipient that the person being referred to is someone the recipient does *not* know, including 'someone' or 'a woman I once worked with'.

In sum, we have a wide variety of person reference forms at our disposal, but there are organisational principles that reveal a preference for a recipient-designed form using a recognitional reference wherever possible.

Person reference in communication impairments

The impact of communicative impairments on person reference in interaction has received relatively little attention. In the field of aphasia, isolated proper name anomias and problems with proper names within a wider aphasic language disorder have been documented (Geukes and Muller, 2015) but a focused examination of proper nouns or the more specific person reference, as they play out in conversation, is relatively rare.

Wilkinson (2009) was the first to investigate aphasia and proper noun production during everyday conversation from a CA perspective. Through his investigation of how a man with fluent aphasia (Derek) constructs person-referencing turns Wilkinson suggests that certain practices may have provided Derek with more time to access and successfully produce the desired proper nouns. The analysis highlights how features of language, such as the production of a name, can be an outcome of interaction practices, as well as those related to neuropsychological processing. Further work by Barnes (2013) presents a single case study of a speaker who recurrently utilises common noun phrases (e.g., 'that young bloke') as reference forms in place of proper nouns. The conclusion drawn is that such turn construction practices represent adaptations to proper noun anomia in conversation.

Penn *et al.'s* (2015) paper addresses mentions of persons by a person with aphasia which are shown to prove problematic by the (non-aphasic) recipient. Using one case (JD in conversation with a speech and language therapist) four instances of other-initiated repair are presented – all of which feature troubles with person reference. The difficulties experienced are varied, including person recognition ('who is X?'), relational components ('what is the relationship between X and Y?' and phonemic paraphasias ('scanner girl' instead of 'spanner girl' used as a colloquial term for 'mechanic'). It is important to note that at least one of the troubles is also characterised by difficulties in recognising the turn's action: 'scanner girl' for example, turns out to be a self-reference by the person with aphasia, something that proves particularly problematic for the recipient. The instances examined all show how sensitive references to persons are in the talk of people with aphasia.

In the field of dysarthria, reference to persons as a specific area of enquiry is even less common. An episode of talk between a woman with acquired dysarthric speech and her partner (Extract 4: Wilkinson *et al.* 2011) features a problem with two names within one turn construction unit (TCU) resulting in an extended repair sequence beginning with natural speech

but then utilising a speech generating device to pursue a self-repair. In this case, the difficulties encountered by the recipient relate initially to the (un)intelligibility of the naturally spoken trouble source turn but then to additional SGD output that compounds the problem by adding further, non-repair related, information.

Subsequent work by Bloch and Wilkinson (2013) addresses reference to persons in dysarthric talk as a central concern. The name 'Gladys' proves to be particularly challenging for the participants given its placement within the SGD produced utterance 'and we have a new lady, Gladys' (referring to a new person at a day centre). The ensuing talk is characterised by a series of SGD- and natural-speech-mediated repair sequences lasting over three minutes. Once it has, eventually, been made intelligible, the recipient has trouble in understanding what the name Gladys is being used for. Ultimately these troubles are resolved through natural speech and the use of shared referential knowledge (see also Penn *et al*. 2015). The most significant feature within this sequence is how repair attempts by the speaker with dysarthria can become new trouble sources in their own right. This has a significant impact on the recipient's ability to understand what is being said and to recognise the relationship between an immediately prior turn at talk and whatever has come earlier.

Methods and Participants

The data were collected as part of a study on interaction between people with progressive dysarthria and family members. UK National Health Service (NHS) research ethics approval was granted prior to data collection. Each family was loaned video camera equipment. They were then asked to record themselves, with no researcher present, for approximately 30-minutes. It was requested that the recording take place during a regular opportunity for everyday conversation. This process was repeated at three-monthly intervals over an 18-month

period. Each video recording was then examined for potentially interesting interactional phenomena.

It was noted throughout that references to people's names made by speakers with dysarthria were being treated, by recipients, as problematic. In some instances this resulted in extended repair sequences. A series of extracts featuring problems with references to people was then identified and the talk transcribed using CA conventions (Jefferson, 1984). A closer analysis of repair followed with ongoing refinement of the transcripts. Each sequence was then subjected to an in-depth analysis, which focused on explicating the sequential context in which the phenomenon was occurring, the interactional work that was being achieved and the orientation of the participants towards the phenomenon.

Data from four different dyads are presented below. In each dyad one person has a diagnosis of ALS with an associated dysarthria. Each person's speech profile varies depending on the speech-subsystems affected. Alex, for example, has significantly reduced breath support, whilst for Brenda, the difficulties are related to hypernasality. Rose has predominantly articulatory problems whilst Jean is *anarthric* with no ability to produce meaningful speech for communication, just some residual gross vocalisations. For all of the participants with ALS, articulation, particularly tongue function, is problematic. In terms of intelligibility their conversation intelligibility ratings on the Frenchay Dysarthria Assessment (Enderby and Palmer, 2007) vary from grade 'b' ('speech abnormal but intelligible: patient occasionally has to repeat') to grade 'e' ('Patient totally unintelligible').

In the following analysis it is noted that reference to persons are clearly part of the everyday talk of people with dysarthria but that such references are one type of action that appear to be treated as problematic by recipients. There is, therefore, value in examining how troubles with person reference arise, and how they are manged. The analysis is presented through six extracts across three sections.

Section 1: The first two extracts feature talk in which a person's name is treated as problematic, largely in terms of intelligibility. These troubles are resolved promptly enabling talk to progress.

Section 2: In this section there is some degree of ambiguity or uncertainly regarding the person reference. The nature of the problems is still rooted in intelligibility but the recipient displays at least some degree of difficulty in establishing the person to whom the speaker is referring.

Section 3: Here, the speakers with dysarthria have more significant intelligibility problems. This is qualified both through speech sound/intelligibility measures but also through how their contributions in interaction are designed. Both dyads employ augmentative strategies that alter turn design and turn receipt practices. For these final two extracts the problems experienced relate to action as much as (un)intelligibility, with the recipients displaying uncertainty as to what is being attempted by the speakers' turns.

Analysis

Section 1

Prior to the following extract Pete and his mother Brenda have been talking about neighbourhood friends and acquaintances with young children.

Extract 1

```
01    P    they >the-it's just a< whole stream of (0.4) either boys or ⌈girls! ⌉
02    B                                                            ⌊((nods))⌋
03         (1.0)
04    P    but-er when you think there's a fifty fifty chu-hance so=
05    B     =yes (0.3) wi-(0.2)⌈with Vhikey.       ⌉
06                            ⌊((points to Pete)) ⌋
07         (1.0)
08    P    Vicky? ye⌈ah      ⌉
09    B           ⌊ ((nods)) ⌋
10    P    yeah yes they still haven't decided on a name
```

Pete's talk about boys and girls (line 01) makes relevant the potential for person reference although at this point there has been no mention of any particular name. It is then Brenda who

9

produces the name Vicky (line 05). This reference is accompanied by a pointing gesture towards Pete. This gesture may be actioning an expectation of recognition or knowledge to which Pete has additional access.

Whilst there is no significant trouble here, the fact that there is a one-second silence followed by Pete's hearing display (line 08) with rising intonation provides evidence that Vicky is not totally unproblematic. It is at least an item that demands some attention by Pete in offering it as a *candidate understanding* for confirmation (Heritage, 1984). The progression here is prompt. Brenda confirms via a head nod and Pete reveals his understanding of the reference with agreement and what appears to be an update on Vicky, and potentially her partner's, decision regarding their baby's name. The nature of the trouble in this extract may relate to (un)intelligibility, to person recognition, or potentially, to a combination of both.

Extract 2

Prior to the talk in this extract Tom has been reporting how two, unnamed, people have queried whether Rose has had a stroke.

```
01    T       an they went for the x-rays and brain scan I said the um I told em the
02             brain scan was perfect perfectly clear
03    R       ((nods))
04    T       and er nothing to do with ⌈er ⌉ stroke at all
05    R                                  ⌊mm ⌋
06    R       ((coughs))
07            (4.0)
08    T       °er:°
09    R       (2 syllables) (0.3) (3 syllables) Jan-(1 syllable) (4 syllables)=
10    T       =yo⌈u what ⌉
11    R          ⌊(Janet)⌋
12            (0.5)
13    T       Janet asked?=
14    R       =(Brenda) (.) (Brenda)
15    T       oh that's the first time she's spoken to you >when you went to have
16            yer hair done<
```

The extract begins with Tom's reference to 'perfectly clear' scans and his report that there is no link to a stroke at all (line 04). There is then a lapse in the talk before Tom initiates minimally to be followed by a more substantive utterance by Rose (line 09). The turn

comprises a series of syllables which are shown subsequently to be unintelligible. Tom follows this immediately with an other-initiation of repair. This action treats Rose's prior turn as problematic although the exact nature of the trouble source is not specified. Tom's 'you what' (line 10) performs an open-class repair initiation indicating the need for a full repeat of the prior turn.

Rose provides an overlapping repair attempt (line 11). This repair treats, in the first instance the name 'Janet' as the trouble source. There is then a pause before Tom displays both a hearing of the repair with his repeat of 'Janet' together with his understanding that it is Janet who has asked something. Tom's utterance in line 13 may have a double function here; both to receipt/display what he has heard, but also, in the form of an incomplete utterance, to do a further other-initiation of repair on Rose's talk. Tom is in effect saying, 'I now know the first part of the utterance in line 09 was 'Janet asked' but I don't know what the next word(s) was- please supply it' (which Rose then does). In retrospect we can see that the whole phrase 'Janet asked Brenda' is in fact treated as repairable as the sequence proceeds.

Section 2

In Extract 3 Brenda enquires whether Pete has had contact from someone called John. Having established a name reference, further repair work is required to identify the exact person to whom Brenda is referring.

Extract 3

```
01    P    °yeah°
02         (4.0)
03    P    °but er: °
04    B    °ha- haf (0.2) you (heard) (.) frum (.) ↓Jhohn lhhately
05    P    have I heard from (.) John?
06    B    ((nods)) (1 syllable)
07         (1.0)
08    P    John?
09         (3.0)
10    P    John-John LaMette?=
```

11	B	=yeah
12	P	((*shakes head*)) NO
13		(0.4)
14	P	>I think-I think< we had a card but I'm not sure

Brenda initiates a new topic (line 4) with a first pair part enquiry about John. Given her use of this person reference we may assume that John is a person with whom both Brenda and Pete are familiar. In next turn position Pete produces an other-initiated repair with a recast of her talk placing a stress emphasis on the person reference together with a slight pause prior to its production. At minimum Pete displays his awareness that Brenda is making an enquiry about another person. Through this turn Pete offers an understanding check for Brenda to accept or refute. Through her subsequent head nod Brenda attempts to show that John's hearing of her talk is correct. She also expands the meaning with further specificity, possibly through the production of his surname, although this proves unclear to us as well as to Pete.

Whatever Brenda is attempting through her talk in line 6 is again treated as problematic by Pete with a second other-initiated repair. He repeats 'John' despite Brenda's prior affirmation. With no uptake by Brenda, John now self-selects (line 10) and reveals the potential nature of his difficulty. His production of John + surname, a third other-initiated repair, provides evidence that 'John' in isolation is not enough. It may be the case that given its commonality the name John, in isolation, is too ambiguous for confident recognition. In adding a surname Pete is attempting to establish the exact person to whom Breda is referring. Pete's candidate surname is then confirmed by Brenda in line 11 enabling Pete in next turn to respond to the original first pair part enquiry. The nature of the trouble in this extract is again potentially related to (un)intelligibility but with additional ambiguity as to which John Brenda is referring. With three other-initiated repair turns addressing the same trouble source we begin to see how each of these actions structurally delays the ongoing progressivity of the sequence and therefore the conversation (Bloch & Wilkinson 2013, and Griffiths et al., 2015).

Extract 4 is taken from a conversation between Rose and Tom. The main feature is one of

other-initiated self-repair. The talk follows a natural break in the conversation.

```
01    R     oh, ⌈Jean were surprise⌉-ta °aver° frum Kay?
02            ⌊((looks to Tom))  ⌋
03          (0.5)
04    R     weren't  sh⌈e.                      ⌉
05    T                ⌊((begins to shift gaze to Rose))⌋ who?
06          (0.2)
07    R     Jean were surprise-ta-averfrom Kay:.
08          (1.1)
09    T     ⌈OH: Jean Jean     ⌉ yeah
10    R     ⌊Kay: (phoned) yeah ⌋
11    R     ⌈m:  ⌉
12    T     ⌊Jean ⌋ knew that er:
13    R     °yeah°
14          (0.4)
15    T     °sh°(.) °k° she was pleased that er (0.3) Kay had rung us=
16    R     =yeah ⌈m: ⌉
17    T          ⌊yeah⌋
```

Rose initiates this sequence with news about two people, Jean and Kay (line 01). The turn

beginning 'oh' indicates a possible departure from prior talk topic and that what follows should

treated as newsworthy by Tom. There is no immediate uptake by Tom (line 03), and, following

a 0.5 sec silence, Rose self-selects to add an increment (Ford *et al.* 2002) to her first utterance,

in the form of a tag question, marking it as an explicit question action, thus implicating an

answer response by Tom. It is possible that Rose is expecting an uptake after her first turn, but

when this does not occur, she adds further talk making a next turn uptake by Tom more

accountable.

Tom then displays a trouble with the prior talk (line 05). By saying 'who?' he is locating

a person reference in Rose's prior talk as problematic. This reveals some level of hearing on

the part of Tom, that is, he is showing that he has heard enough of Rose's talk to know that she

has made reference to a person or people, but he does not know, at the point, the actual name(s).

Given that the trouble source turn makes reference to two people, Rose now repeats the full turn, dispensing (Schegloff 2004) with the initial 'oh' and the follow up increment from line 04, as both named people are potential candidates for the target of Tom's other-initiation of repair. The notable change in the attempted repair completion turn from the original trouble source turn is a stress on the two name forms: Jean and Kay. Following a silence at line 08, Tom produces his hearing of Rose's attempted self-repair completion. Then through a repetition of 'Jean' he makes public the specific name reference he found problematic. As well as repeating the repaired item Tom also adds an acknowledgement – 'yeah' (line 09). Through saying 'yeah' Tom may be acknowledging a hearing, but he may also be doing an agreement with the action of the trouble source turn, in this case an agreement with Jean's surprise 'to have heard from Kay'. The agreement would be relevant here given that Rose is not offering this as news but rather as something to be agreed on, as demonstrated through her question action in line 04. At this point, it is only clear that Tom has now heard the prior trouble name 'Jean'. However, subsequent talk by Tom at line 15 does show that he has now heard and understood the full trouble source turn.

In both prior extracts the participants have encountered a trouble with the dysarthric speakers' talk. A repair has been initiated by the recipient of the trouble source turn. This initiation has signalled, to some degree, the nature of the trouble enabling an attempted repair completion. Neither extract shows immediate resolution. There are a series of OIRs in extract 3 as the reference to John unfolds, and in extract 4 the OIR is ambiguous given the presence of two names in the trouble source turn itself.

Section 3

Extract 5 is taken from a conversation between Alex and Molly. Whilst still using speech as the primary modality, the participants have developed a highly collaborative turn exchange

system featuring the production of single words or letter names by Alex in the first turn position followed by a redoing of the same turn item(s) in the next turn position by Molly. This dyad's system has been described previously (Bloch, 2005, Bloch and Beeke, 2008). Immediately prior to this sequence Alex and Molly have been discussing Alex's move to a new room, on a new floor, in the nursing home in which he lives. Molly has drawn attention to the fact that he will be living amongst new people. Alex's utterance : 'I will hear Anne' is subsequently treated by Molly as a third party tease, making reference to Anne as someone who, presumably, is known for being loud. The issue here is the accomplishment and recognition of Anne as a person reference.

Extract 5

```
01    A     (I:e::)
02          (0.3)
03    M     eye
04          (0.5)
05    A     (wull heyar)
06          (0.4)
07    M     will
08          (0.4)
09    A     (hear)
10          (0.8)
11    M     I will:
12          (0.5)
13    A     (hear)
14          (0.3)
15    M     hear?
16          (0.6)
17    A     (ay en)
18          (0.4)
19    M     ay:
20          (0.6)
21    A     (en en)
22          (0.3)
23    M     en en
24          (0.6)
25    Al    (e:)
26          (1.0)
27    M     ay en en?
28          (0.5)
29    A     (°he:)
30          (0.3)
31    M     E
32          (1.8)
33    M     ⌈ay en en ee?  ⌉
34          ⌊((puzzled look))⌋
35          (0.3)
```

```
36    A     ((moves lower lip))
37          (0.7)
38    Mo    °what's that°.
39          (2.5)
40    M     £ay en en ee£ I c(h)an't ⌈work that out!⌉
41    A                          ⌊((smiles))   ⌋
42          (0.4)
43    M     huh-ha-ha-HUH  it's not >another one of my<
44          ⌈spelling   ⌉ but er:
45    A     ⌊(1 syllable)⌋
46          (1.2)
47    A     (er:na:me)
48          (1.0)
49    M     I (.) will?
50          (0.3)
51    A     (her name)
52          (0.4)
53    M     her name
54          (0.2)
55    A     ((moves lower lip))
56          (0.2)
57    M     whose name?
58          (2.0)
59    M     OH⌈SO-HAHA-HAHA-↑HA⌉(0.4) ha-ha (.) ↓ha=
60    Al      ⌊ ((smiles))    ⌋
61    M     =(0.4) °ha ha-ha  ha-ha (0.3)⌈°ah ha.  ⌉
62    A                           ⌊(1 syll)⌋=
63          =⌈(1 syll)   ⌉
64    M     ⌊£it w(h)as ⌋another one of my spelling  (.)
65          ⌈things wasn't it£⌉ (.) ay en en ee (.) Anne
66    A     ⌊(ay en  en  ee) ⌋
67          (0.4)
68    M     oh is ↑Anne ⌈ on that ⌉floor?
69    A                 ⌊uh-huh: ⌋
70          (0.2)
71    A     °huh
72          (0.3)
73    M     y(h)es!=
74    A     =⌈((smiles))⌉
75    M     ⌊ ha    ⌋ oh huh-huh °ha right.
```

Alex initiates this sequence with a one syllable utterance which is collaboratively constructed between lines 01-13 to produce what appears to be an utterance in progress: 'I will hear'. Molly's redoing of 'hear' at line 15 features a questioning intonation. The tentative treatment of 'hear' in this turn may be attributable to intelligibility or it may relate to the ambiguity of the word as either the verb form 'hear' (as in 'to hear something') or a prepositional 'here' (as in 'this place here'). It is not possible, at this point, to know the nature of this uncertainty in repeat turn status.

Alex's next action continues the utterance in progress and so displays an acceptance of Molly's prior turn hearing. By line 31, Alex and Molly have jointly spelt four letter names 'a – n – n – e'. Following Molly's production of 'e' at line 31, there is a 1.8 second silence. The absence of Alex as next speaker here is potentially indicative of end of spelling or utterance completion work. In fact it is Molly who takes next turn following this silence. She offers a repeat of the prior letter names 'ay en en ee?' (line 33). Her questioning intonation and puzzled look implies further uncertainly as to the hearing and/or meaning of this construction. Alex now takes next turn to produce a characteristic lower lip movement, offering confirmation of the prior talk repeat. The evidence available to Molly at this point is that 'a-n-n-e' is a correct hearing and production of the utterance construction.

Molly now displays an indication of the nature of the trouble (line 38). She has provided a repeat of the prior spelling turn talk and Alex has confirmed this as correct, but she now asks 'what's that'. Through this turn she is displaying an inability to understand the meaning of utterance in progress. The individual grapheme names are intelligible but what they mean in combination is not understandable. Molly is neither able to construct a meaningful unit from the individual letters, nor recognise the action that the unit might play (i.e., that these letter forms might represent what she later realises is a person reference in the form of a female name). There is then a 2.5 second silence, providing Alex with an opportunity to self-repair, before Molly repeats the individual parts again and then saying 'I can't work that out!' (line 40). It is here that the full impact of the trouble is made explicit. In the same turn, Molly is showing her hearing of the utterance, but also displaying her trouble in establishing its meaning. It is the inability to make sense of collated individual letter names that is so problematic here. Alex begins to smile in overlap with Molly's talk at line 41 and this is followed by Molly's laughter (line 43). She now makes reference to her spelling competency before Alex talks in overlap.

Through the next series of turns Alex says 'her name', repeated by Molly at line 53 and confirmed by Alex with a lower lip movement in line 55. Molly then initiates a further repair by asking 'whose name?'. There is then a two second silence which is perhaps notable given that there is no attempt by Alex to repair the trouble indicated by Molly in the prior turn. It is after this silence that recognition and understanding are displayed. At line 59 Molly begins her turn with 'OH' before starting to say a word beginning with 'so' (possibly sorry) and then continuing with extensive laughter. Molly then takes ownership of the prior trouble by referring to her spelling and then repeating 'a-n-n-e' and saying the sum of the parts 'Anne'.

Having established the prior talk as making reference to a person called 'Anne', Molly now responds to the whole utterance 'I will hear Anne' with a question – 'oh is Anne on that floor' (line 68). Molly is thus treating Alex's utterance as news about the location of someone with whom she is already familiar.

This extract reveals, very clearly, an explicit sense-making process. The fundamental work of intelligibility is achieved through repeats and clarifications of hearings, but the accomplishment of understanding and appropriate next turn action is not simultaneous, requiring repair initiation and the provision of additional referential information. Even with the addition of 'her name', Molly does not immediately understand Alex's reference. One possible reason for this difficulty is the relationship that 'A-n-n-e' has to the larger utterance in progress. It is unclear whether Molly has fully understood the meaning of 'hear' and so may have difficulties in establishing the relationship between 'A-n-n-e' and what has come prior.

In the final extract Jean produces the utterance 'Mike's coming on Friday'. This appears to be a new topic initiation, following Ali's closing talk about one of Jean's friends. The fact that Jean is unable to produce any intelligible speech means that she must utilise non-verbal modalities such as finger spelling, hand gestures etc.

Extract 6

```
01    A    I'll give her a call (0.4) and tell her ta give you the right number
02         (.) make sure she sends it to the right phone °h okay I'll give
03         her ring >in a minute< then we cun-when finished
04    J    uh: uh⌈        uh: uh              ⌉
05             ⌊((finger spells 'W' and holds looking at A))⌋
06    A    Wednesday=
07    J    = ((shakes head))⌈          uh uh:    ⌉
08                     ⌊((raises & shakes hands))⌋
09         ((looks at A, finger spells 'M'- 'I'- 'K' - 'E'))
10         (1.6)
11    A    um=
12    J    = ((finger spells 'M,' holds position and looks at A))
13    A    Em
14    J    ((finger spells 'I' then looks at A))=
15    A    Eye
16    J    ⌈((finger spells 'K' then looks at A)⌉
17    A    ⌊        Mike.              ⌋
18    J    ((points to A with R index-finger and nods))uh: h:urm:
19         (shifts finger from A, across room, towards self))
20    A    okay ((nods head))
21    J    ur:: (1.0)  ur⌈              ur: ur    ⌉
22                   ⌊((looks at A and finger spells 'F'))⌋
23    A    Friday.
24    J    ⌈              ur:    ⌉ ((moves hand towards self)) ur ur:=
25         ⌊((nods head with R thumbs up))⌋
26    A    °okay°
27         ⌈give me a clue before you start spelling willya then I got an idea⌉=
28         ⌊ ((signs 'clue' and gesture action of signing))                ⌋
29    J    =((laughs and slaps R hand on lap))
30    A    ⌈It's about a na:me (.) Mi:ke      (.)  ⌉ thatud give me an idea
31         ⌊((signs 'name' and then finger-spells 'M'))⌋
32    J    ((uh huh huh))=
33    A    =>£I thinkin< what's that Micky I thought mat-monkey⌈HahHahhuh huh ⌉
34    J                                    ⌊((smiles))    ⌋
35    A    you know what my £sphelling's like£⌈((huh huhhuhhuhhuh)) ⌉
36    J                          ⌊   ((smiles))   ⌋huh
37    A    Mike's coming (.)⌈Friday  ⌉
38    J                ⌊((nods)) ⌋
```

This extract begins with prior topic closing talk by Ali (lines 01-02) before Jean initiates with

vocalisations and the finger spelt 'W'. The physical holding of this letter name and the

accompanying eye-gaze to Ali indicates turn completion and next speaker selection. The finger

spelt 'W' is interpreted by Ali as 'Wednesday' (line 05). This, it turns out, is not Jean's

intention: Wednesday in British Sign Language is conveyed through a *repeated* interlocking

'W' movement and not a single hold. Ali's interpretation is rejected by Jean who proceeds to finger spell a series of letter names: M-I-K-E (line 09).

We can see in retrospect that this series of letters spells the name 'Mike', something that both participants make explicit in subsequent talk, but at this point in the conversation Ali displays no recognition of what these finger-spelt items represent. This is in clear contrast with the talk in Extract 5 in which each of Alex's words or letter names is repeated back by Molly in next turn position.

Jean treats Ali's lack of uptake at line 10 as problematic and initiates self-repair at line 12. This time her production comprises individual letter names one turn at a time. This now operates in a similar way to Alex and Molly in Extract 5. Here Jean produces the first letter name 'M', holding her hands in position whilst looking at Ali. Ali treats this as a turn transition point, offering her interpretation of the sign with a verbally produced 'Em'. Jean then proceeds with a finger spelt 'I' (verbalised by Ali) and finally 'K'. Ali produces 'Mike' in overlap with 'K' – an anticipatory completion of the word in progress (Bloch, 2011) which Jean confirms (line 18).

Following the collaboratively produced 'Mike', Jean points from Ali to another part of the room and then to herself. This finger movement, together with the vocalisation, might be referencing Mike as 'coming to me'. Jean now signs an approximation of Friday (two fingers of one hand tapping two fingers of the other) which Ali verbalises in next turn (line 23). Again, Jean confirms and again moves her hand towards herself – possibly redoing the same movement representing 'coming to me', something that Ali has not yet registered explicitly. Ali's receipt of this talk, a quiet 'okay' (line 26) prefaces what turns out to be a mild complaint.

Despite having been produced considerably earlier in the sequence, the complainable here centres on 'Mike' as the trouble source. Ali asks for a 'name clue' – stating it would help if Jean told her she was going to produce a name before the name is actually produced. The talk

that follows reveals in part the nature of Ali's difficulty. Her reference to 'what's that' resonates with Molly's talk (Extract 5: line 38), an open class OIR (Drew, 1997). The issue here, according to Ali, is that she could not recognise 'm-i-k-e' as a name. Ali's complaint is mitigated in part by her admission of partial responsibility, again resonating with Molly's own reference to spelling.

The repair sequence ends with Ali's recap of Jean's full utterance: 'Mike's coming Friday' (line 37). Jean nods in agreement, overlapping with 'Friday'.

Discussion

Dyads affected by dysarthria experience inevitable difficulties with (un)intelligibility, leading to an increase in other-initiated repair sequences that can take numerous turns to resolve (Bloch and Wilkinson, 2011, Saldert *et al.* 2014). Resolution often features multi-attempts at self-repair through a variety of modalities (Bloch and Wilkinson, 2013). Evidence suggests that trouble sources are not randomly distributed but may be associated with actions such as topic transition (Bloch *et al.* 2015). In this chapter, we have drawn attention to person referencing as another potential site for troubles.

Why are references to persons problematic?

References to persons are potentially problematic in dysathric-talk insofar as they may be used, as in all the extracts in above, to identify persons not present and so lack the assistance of co-present identification. They may also be problematic because the recipient may not be familiar with whomever is being talked about and/or because they may relate to knowledge not available to the recipient. Additionally, person references remove all 'categorical work' apart from what is implicit in the turn in which the person reference occurs in. In this way names are unique and may not be predictable from the sequential context (i.e. both prior to the TCU in

which they occur as well as the other words within that TCU). This may mean that there is a greater reliance on the phonetic 'decoding' of the word by the recipient than might be the case with other word classes.

We can see that (un)intelligibility is a significant contributor to all of the person reference difficulties displayed. A recipient needs to be able to decode a speech signal adequately in order to take an appropriate next turn. Where an intelligibility receipt cannot take place the mechanisms of other-initiation of repair are employed. However, doing intelligibility does not necessarily mean that understanding is complete. In Extract 3, the name 'John' is heard by Pete but he seeks further clarification as to which John is being referenced, whilst in Extract 4, the letter names for 'Anne' are successfully decoded and shown to be hearable but clearly not understandable, the latter trouble being based, potentially, on the understandability of the utterance in progress and its sequential relationship with prior talk. 'Anne' has very little, if any, context, evidenced through Molly's inability to even recognise 'Anne' as a reference to person.

In terms of repair resolution, a range of practices is observable ranging from candidate understandings designed for affirmation (Extract 1: 'Vicky') and person reference recognitions (Extract 4: 'who?') to the use of shared referential information. During the 'Anne' sequence, Alex invokes 'her name' (Extract 5: line 51) in an attempt to facilitate Molly's understanding. This provides enough of a clue (that the trouble-source is a name reference) that whilst initially unsuccessful does lead to recognition. The issue here is that participants can use whatever repair resources they have available to suit the nature of the trouble source providing they recognise the nature of the trouble itself. Molly's (Extract 5) troubles are notable given that she cannot, initially, figure out why the trouble *is* a trouble.

Responsibility for troubles

One observation arising from this analysis relates to competence. As Robinson (2006) notes even the subtlest forms of OIR have the potential to raise the relevance of a lapse in competence (i.e., a lapse of self-correction) by the trouble-source speaker. It may be hypothesised that the longer a trouble takes to resolve, the greater the risk of fault identification (e.g. blame) arising. What transpires in the extracts above is that there is no competency talk in Extracts 1-4, but there is in Extract 5 and 6. In Extract 5 Molly takes responsibility for 'another one of my spelling things' – presumably a reference to the fact that she has experienced spelling problems before. Her earlier talk 'I can't work that out' (line 40) also provides insight in the ownership of the problem. In Extract 6 Ali begins with a teasing complaint – 'give me a clue before you start spelling' before shifting the balance of responsibility to herself - 'you know what my spelling's like'. This resonates with observations of partner responses to problematic talk by people with aphasia (Barnes and Ferguson, 2014), suggesting that there are more commonalities to be found across different communication impairments than are typically assumed (see also Bloch and Beeke, 2008).

Implications and conclusions

We have previously demonstrated that topic shifts in dysarthria talk are one potential site for troubles. It may be the case that references to persons are another. These may not necessarily be mutually exclusive (e.g. the trouble in Extract 6 may well be associated with a new topic initiation) but there appears enough evidence here, as with aphasia, to mark person reference as potentially more vulnerable than other actions. One general implication is that the distribution and format of trouble sources in dysarthric-talk in interaction may require as much as attention as the quality of the speech signal itself. In reality we find that intelligibility exists on a continuum. It is not an all or nothing state – largely because it is a shared accomplishment,

that is, a production display and an understanding display. Additionally, we may need to develop a more sophisticated appreciation of motor speech disorders in interaction. People with Parkinson's disease, for example, often experience language-based symptoms beyond motor speech that impact on interaction (Saldert *et al*. 2014, Saldert and Bauer, 2017). The combined interactions between motor-speech, language and cognition in a range of acquired neurological disorders is complex but there may be value in understanding how all three elements impact on interaction.

In conclusion, names provide one window into which we might consider how dysarthric talk becomes and is treated as problematic – to do this the methods of CA are invaluable because they not only address the name as a problem or trouble source but also reveal how the recipient treats it as a trouble and how the participants then attempt to resolve the trouble.

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