Julie Radford: Institute of Education, University of London

Adult participation in children's word searches: on the use of prompting, hinting and supplying a model

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ABSTRACT

Although word searching in children is very common, very little is known about how adults support children in the turns following the child's search behaviours, an important topic because of the social, educational and clinical implications. This study characterises, in detail, teachers' use of prompting, hinting and supplying a model. From a classroom dataset of 53 instances, several distinctive patterns emerged. A prompted completion sequence is initiated by a 'word retrieval elicitor' (*'fishing::'*) and is interpreted as a request to complete the phrase. Non-verbal prompting is accomplished through a combination of gaze and gesture and, also, as a series of prompts. Hinting supplies a verbal clue, typically via a wh-question, or by specifying the nature of the repairable. In contrast, the strategies that supply a linguistic model include both embedded and exposed corrections and offers of candidates. A sequential relationship was found between prompting, hinting and supplying a model which has implications for how clinicians and teachers can foster self-repair.

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INTRODUCTION

Searching for words is commonly experienced by both adults and children in ordinary conversation. Yet, for most people, word searching does not cause undue interactional problems since the search is either resolved alone or with the participation of another person in the next speaking turn (Schegloff, Jefferson and Sacks, 1977; Schegloff, 2000; 2007). There is a sizeable population of adults and children, however, for whom word searching can present additional challenges. For instance, adults who have aphasia as a result of cerebral injury may display word search behaviours such as long silences, search sounds ('*uh*' or '*hmm*') and search expressions ('*what is it*'), which can lead to extended sequences of repair in attempts to arrive at mutual understanding with their partners (Laakso and Klippi, 1999; Wilkinson, 1995). Similarly, many children with specific language difficulties present with overt word finding behaviours, such as repetitions, reformulations, revisions, indefinite reference, substitutions and delays (Stiegler and Hoffman, 2001; Best, 2005). When difficulties are extensive, interventions by speech and language therapists and specialist teachers are warranted.

The purpose of this study is to examine children's word searches at a fine level of linguistic and sequential detail. This is an important topic because of the social, educational and clinical implications. Documenting the sytematicity of the strategies used by the adult to assist the child's search will offer insights into strategies that can be used by teachers and speech and language therapists in direct interventions or when advising others. The findings of aphasia word search studies, using conversation analysis (CA) will be examined first, owing to the research gap with respect to children. Clearly, the reasons why search behaviours occur in adult and child populations are very different (Dockrell et al., 2001; Wilkinson 1995). Nonetheless, on a moment by moment basis, there may be similarities in terms of actual search behaviours and how the conversational partner responds to the search.

Aphasic speakers, in conversations with their partners, engage in lengthy repair sequences which have an orderly structure. The so-called 'hint and guess' sequence

has four distinct phases, including first establishing the problem and the framework for collaborative co-participation before the aphasic speaker supplies hints and the partner offers a series of guesses (Laakso and Klippi, 1999). Both verbal and non-verbal interactional techniques are available to the person with aphasia that foster the involvement of the conversational partner: 'direct invitations', which take the form of a gaze shift towards the partner or are designed as wh-questions (*'what is the name of it?'*), generate a candidate word or guess from the spouse (Oelschlaeger,1999). Systematic techniques are also used by the conversational partner. A guess strategy follows either a direct or indirect invitation to participate in the search whereas the partner might use an alternative guess strategy when a guess is rejected in order to offer a series of candidates, over several turns, in a similar semantic domain (Oelschlaeger and Damico, 2000). Through prosodic analysis, the authors show how a completion strategy differs from guessing in so far as the candidate word has final falling intonation, as if to suggest a fact, whereas guesses have rising intonation as if offered more tentatively, like a question. Additional resources available to the partner to facilitate the offer of a candidate word include drawing on one's own world knowledge or, given their familiarity, drawing on knowledge of shared personal experience between spouses (Oelschlaeger, 1999). This work has important implications for speech and language therapists since it calls for taking account of the local interactional techniques and resources available to the dyad.

As far as children are concerned, well established approaches to intervention include the use of semantic or phonological elaboration techniques that aim to enrich the child's stored knowledge of words and thereby facilitate lexical retrieval (Wing, 1990; McGregor, 1994). Whilst such approaches may be effective for increasing word knowledge, since they take place outside the context of meaningful discourse settings, there is a risk of lack of generalisation (Stiegler and Hoffman, 2001). What is also needed, therefore, is better understanding of how both verbal and non-verbal interactional processes operate for children on a moment-by-moment basis during the search for words.

Recent research illustrates, in some detail, how the child draws on a repertoire of verbal and non-verbal resources to invoke the participation of the adult (Radford, 2009). For example, silence, level prosody and gaze withdrawal can work as turn-

holding devices to allow the child to pursue the search alone (self-repair). In contrast, direct gaze at the adult invites participation and support in the search. Furthermore, the child's use of various devices provides valuable linguistic information that triggers the adult's subsequent use of a candidate lexical item which assists in resolution of the repair. Examples of such devices include phonological clues (e.g. first sound of the word), superordinate semantic category labelling (e.g 'name' to trigger a specific name), wh-type questions (e.g. 'what's it say?') or pronouns that generate the relevant noun.

Despite increased understanding of aphasia interaction, as well as the recent work on the child's resources, there is limited research concerning the communicative strategies of adults whilst talking to children during word searches. Of relevance to this study is research into discourse-based therapy where the adult tailors the type of feedback according to the nature of the search behaviour (Stiegler and Hoffman, 2001). When the child produces the target word following a delay or use of place holders such as *'uhm' 'uh'*, the adult simply provides supportive feedback to confirm understanding. On occasions when the word remains elusive, the co-participation of the therapist is needed to resolve the search. A request for clarification (e.g. *'What do you mean?'*) is relevant when the child uses an indefinite reference or substitution; a request for associative information (e.g. '*What does it look like?'*) is recommended when there is significant difficulty such as a long silence. If these lower levels of assistance do not result in the target word, the adult may offer a phonemic cue or, as a last resort, provide a model of the target word. There is preliminary evidence from three case studies that locally tailoring the feedback strategies can be effective (Stiegler and Hoffman, 2001). The current study aims to extend understanding of adult feedback strategies by providing further analytical detail in the sequential context of the discourse.

Moreover, despite the fact that classrooms represent a significant context for communication during childhood, there is a paucity of research involving children with word finding difficulties in educational settings. A key feature of classroom discourse is that, since teachers necessarily interact with whole classes and are influenced by a curricular agenda, interactions are frequently dominated by the adults' use of interrogatives and evaluations (Burns and Myhill, 2004; English, Hargreaves

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and Hislam, 2002). These studies show that the effect of adult dominance is minimal participation by children in terms of opportunities to initiate and elaborate their responses. Group work, however, may operate differently, especially in learning activities where children's ideas are being generated. Group story writing is a good example of a context where a more dialogic type of discourse is possible (Radford, Ireson and Mahon, 2006). Word searching in classrooms may therefore be more common during such an activity because the child is positioned, verbally, through the teacher's 'story invitation' to search for a novel idea to offer.

The principal aim of the study is to explore various ways in which the adult participates in the child's word searches in small group educational contexts. Better understanding of how the participants' turns are coordinated will provide information of relevance to the trainers of teachers and speech and language therapists who work in educational settings. The research questions are:

1. How precisely is participation in a child's word searches accomplished?
2. How do the various practices differ in terms of assisting the child to self-repair?
3. Is there a sequential relationship between the practices?

The first question targets the specific design features of the adult's turns in order to gain deeper insight into how they respond to the child's prior turn. The second question addresses the implications for what happens next and whether there is a systematic relationship between the adult's strategy and the child's ability to self-repair. The final question concerns any observable patterns over the sequence of discourse when the repairs are accomplished over several turns.

METHODS

Data are presented from two teacher-child dyads in classroom settings: Ava (A) and Ciara (C) (not their real names). The two children both experience frequent word finding difficulties during classroom tasks. At the time of data collection Ciara was aged between 8 years and 3 months and 8 years and 7 months and Ava was between 5 years and 5 months and 5 years and 8 months. Both children have a statement of special educational needs that indicates a primary specific language difficulty whilst excluding hearing loss, emotional difficulties, learning difficulties and autism. Based on data collected from both their teachers and speech and language therapists, a summary of their difficulties can be found in Tables 1 and 2. Ciara has a moderate

receptive and expressive language difficulty and additional specific problems with word meaning and naming but without any phonological difficulties or dyspraxia. Word retrieval is described by the teacher and therapist as a significant block to her learning of language since she searches overtly for many words that she has in her receptive vocabulary. The teachers in this study were purposefully selected because they are highly qualified and experienced in order to demonstrate competent intervention strategies. Ciara's teacher has worked in language resource provision for 15 years, she has an additional specialist qualification in the field of educating children with specific speech and language difficulties and has attended and delivered specialist training in the field. She uses visual scaffolds as well as prompting and cueing as intervention strategies. Ava, on the other hand, has a severe receptive and expressive language difficulty and significant problems with word meaning and naming, but only mild phonological immaturity and no dypraxia. Her difficulties impact on her self-esteem and confidence and affect the learning of literacy skills. Her teacher has a degree in linguistics, an advanced qualification in teaching children with speech and language difficulties and has been a specialist teacher in a language resource provision for 10 years. She allows Ava lots of time to process language, uses short sentences, visual augmentation and checking strategies.

Data collection was conducted in two specialist provisions for children with specific speech and language difficulties in London, England. Lessons were video-recorded on four separate occasions in five different activities, making a total of 20 lessons. Story writing, a small group task involving 4-5 children, was recorded with both C and A. Here, the children either wrote individual stories with the support of the teacher and visual materials or a group story on a flipchart. Circle-time was also recorded in both scools; 5-6 children sat on chairs, or the floor, and the teachers worked on language and social skills and (with C) clarification requesting. The fifth activity, with Ciara, was called 'speaking book' and involved the adult and child looking at a book together into which Ciara had stuck selected pictures that represented her own experiences; (for detailed information on the activities, see Radford et al., 2006).

The video-recordings were viewed repeatedly and discussed with a colleague who is experienced in CA techniques in order to strengthen the judgements made. Examples of word searching sequences were selected according to the following behavioural

criteria. An instance was included where the child exhibited more than one search behaviour in a turn, such as pauses, '*uhh*', substitutions and/or circumlocution and failed to produce the target lexical item. A total of 53 such instances were identified and transcribed in detail, alongside the surrounding stretch of talk. Some are easily identifiable as word searches, as evidenced by when a lexical item or phrase is retrieved later in the sequence. Owing to the nature of classroom discourse, other examples are less clear; they could be interpreted as difficulty retrieving the item of information requested by the teacher as a result of a lapse of memory. For the purposes of this study, both count as 'searches' since the adult treats them as such.

The examples identified were analysed according to the procedures used by conversation analysts, as exemplified in the work of key researchers such as Jefferson (1987), Goodwin and Goodwin (1986). CA is a qualitative, inductive approach to the analysis of interactions that has its origins in ethnomethodology (Schegloff 2000; 2007). It is very different to methods that code linguistic behaviours according to pre-determined categories. Instead of using inter-rater reliability checks for the coding, CA offers both the data for public inspection as well as detailed line-by-line analysis from the perspectives of the participants. All instances are thus essentially distinctive from each other and, although the analyst searches for patterns, it is not usual to provide quantitative information. Instead, the following analysis will take account of how the adult's participation emerges from the child's search turn and consider the sequential implications of the adult's contribution. The theoretical points that emerged during the process of analysis necessitate a fine level of linguistic and para-linguistic detail. Therefore the transcriptions shown in this study include both verbal and non-verbal features as well as, in one case, prosodic information (which is why a question mark signals rising intonation when the turn may not be a question). It is necessary to adapt systems of transcription used elsewhere to reflect this level of detail. The reader is referred to Appendices 1 and 2 for further information.

FINDINGS

Six distinctive patterns of other-initiation and correction emerged from the dataset of instances that were analysed. For ease of presentation, they are grouped under the umbrella headings of prompting, hinting and supplying a model. As will be shown in more detail, in hinting and prompting sequences, the child hears a request to self-

repair whereas in the case of where a model is supplied, the child treats this as correction and repeats the model.

Prompting to self repair

The teacher's repertoire of participatory practices includes versions of 'prompting'; so-called because the child interprets them as a prompt to self-repair. The examples that follow differ in terms of their design: some include both verbal and non-verbal components, depending on the local resources available to the participants. First of all, Extract 1 is an example of a prompted completion sequence that emerges in response to the child's search. As the teacher is prompting the child to retrieve a word, it works specially as a '*word retrieval elicitor*'.

Extract 1: Prompted completion

The teacher has asked each child to retell a plot-line from a story that members of the group devised in a previous lesson.

```
        1   T   And what do::es J<u>a</u>ck take.

                _____

                _____
                x-----book-----------x
        2   C   a (0.2) ↑f:ish (.) ing


                ,,,--T--x
        3   C    (0.2)

                _____

                _____
→       4   T   fishing::

                ____

                ____
        5   C   ne:t
        6   T   net she takes a net yeah and does she take something [(else?)
        7   C                                                        [a fishing rod?
        8   T   a rod oh okay.
```

8

At line 2, C responds to T's question by starting to offer her idea about the story's plot but her turn-completion unit (TCU) remains syntactically incomplete. A TCU is the basic building block out of which turns are fashioned; it has a systematic organisation in terms of its intonational contour and grammatical clause structure (Schegloff, 2007). C employs a repertoire of resources in line 3, namely prosody, syntax and directs gaze to T, in order to invite T's participation in the search (for more details, see Radford, 2009). Given such a direct invitation, one option for T would have been to supply a candidate lexical item to complete the TCU in a way that supplies correction. Instead, T repeats C's prior lexis whilst adopting similar mid pitch height and lengthening the velar nasal. This has the sequential effect of eliciting a relevant next from C that completes her noun phrase with lower pitch height, suggestive of turn-final movement.

How the '*word retrieval elicitor*' described here compares to the prompts examined by Lerner (2004) is of interest. One similarity is that T's prompt is brief; since it is formed as a stand-alone unit. However, while Lerner's prompts are connectives (e.g. *about, when, if*), in word searching the key difference is that the prompt recycles the child's material; here it is a lexical repetition of the final element of the child's prior turn. Another comparable feature concerns the prosody of the prompt in so far as the final sound is lengthened. Furthermore, whereas Lerner's prompts occur after a syntactically complete TCU, in word search data, the prompt continues an incomplete turn, and is thus suited to generating its completion. Most importantly, the prompt does not add material that the child could use which marks it as different from the hints that are discussed later. Therefore the child is required to rely on his/her own resources to complete the search.

Examples 2 and 3 illustrate how the teacher employs non-verbal resources, first through a combination of gaze and gesture, to initiate repair and secondly, through a series of prompts. There are no accompanying verbal components.

Extract 2: Non-verbal prompting via gaze and gesture

This is a speaking book lesson where the teacher uses questions that work as 'invitations' (Radford *et al*., 2006). Such an elicitation strategy (see line 1) targets the child's personal experiences or opinions and is therefore suited to news telling. The photograph concerns a trip to see 'Santa' and is visible to both participants, providing a shared focus for the child's personal news report.

```
                 x---photo----------------------------
    1   T    …and then what was th<u>is</u> one


    2   C    We went to (2.6) uh:: (3.6)


                 T x photo----.,,,Ciara--------------
                 C x photo-------------------------
→   3   T    ⌐((places pen tip on photo ⌐
        C    ⌊     (1.2)                     ⌋


                 x--Ciara------------
    4   T    ⌐Who's this      ⌐
             ⌊ pen on photo)) ⌋
```

C begins to answer T's question at line 2, with a description of an outing that took place with her family the previous Christmas. C's personal event report goes as far as communicating who was there ('we') and that they embarked on a journey ('went'). It is during her search for the next item of news that C displays her difficulty through silence, a filled pause (uh::) and then a further, longer silence. T is generous in her allowance of two silences, including one of over three seconds, affording C the opportunity to hold the turn. At line 3, T breaks the silence by using a clear gesture, placing the tip of the pen that she is holding on the photograph. The photo offers a potential clue that C could use to self-repair her earlier unresolved search at line 2. Furthermore, whereas both participants had been looking at the photo, T's gaze shifts to C, thus positioning her to search for the elusive word or phrase herself. However, T's non-verbal prompt at line 3 does not generate a self-repair by C within the second or so that T permits. In fact, there were no examples in the current dataset where a

non-verbal prompt, without verbal components, generated retrieval of a word or phrase.

Extract 3: Series of non-verbal prompts

The teacher is writing a story with small group. The children have been asked to contribute character and plot ideas and T draws their suggestions on the flipchart as a visual reminder. At line 3, A is invited to re-tell the story so far.

1	T	(1.0) And what did the cheetah say
2	A	Stop it
3	T	Stop it (1.0) stop it (2.2) Okay A tell us the story
		((writes stop…….it..)) ((points to flipchart))
4	A	One day (.) there was a (0.3) uhh a cheetah (0.2) live in a house (.)
5		and there was a dad (.) and (.) and (.) and (.) and (.) uhh (0.2)
→ 6	T	*(**(points to baby picture on flipchart)**)*
7		(2.2)
8	A	uhh
→ 9	T	*(**(rocks cradled arms from side to side)**)*
10	A	Baby
11	T	Good girl (.) a baby (.) and what did the baby say
		((holds thumb up))
12		(0.8)

In Extract 3 the key analytical feature is how the teacher's gestures are used in a sequence when A fails to self-repair after the first prompt. Whilst A is re-telling the story at lines 4-5, she hesitates, fills two pauses and repeats herself whilst searching for the next words. In orientation to this turn, T points to the baby picture on the flipchart but a silence follows and another filled pause at line 8. In the next turn, T uses another gesture which may be termed iconic in the sense that it represents the cradling of a baby in a mother's arms. In her next turn, A accomplishes the self-repair when she says 'baby' and this is accepted by T with explicit verbal praise. There appears to a sequential relationship between the devices used at lines 6 and 9 which will be discussed later.

Hinting to self-repair

What distinguishes *hinting* from p*rompting* is that additional semantic information is provided verbally which leads (at least ultimately) to retrieval of the searched-for word or idea. The hint is typically verbal and is often combined with gesture. In these data, there appears to be a sequential relationship between non-verbal and verbal practices; a non-verbal prompt in isolation is found first in the sequence (as in Extract 2). In orientation to the child's lack of response, and thus failure to retrieve the word, the adult employs an additional verbal device, a wh-question.

Extract 4: Verbal and non-verbal hinting (Wh-question)

Extract 4 continues the extract 2 following T's gesture.

```
            T x photo----.,,,Ciara-------------
            C x photo--------------------------
   3   T  ⌈((places pen tip on  photo⌉
       C  ⌊   (1.2)                   ⌋


            x---Ciara-----------
→  4   T  ⌈ Who's this      ⌉
          ⌊((pen on photo))⌋


   5   C  Santa?
   6   T  mm hh
   7   C  We saw Santa (.) an he gave us some sweets an we went outside.
```

Since T had positioned C with gaze to respond to the gestural prompt, C's silence at line 3 is accountable. T orients to C's lack of response by offering C a verbal hint (line 4), as opposed to extra time to retrieve an answer. T's hint takes the form of a wh-question which is minimally phrased and draws attention to the nature of the response required: that it is a person. Since it is coordinated with T's sustained gesture at the picture, it supplies a further clue that narrows the options for C in terms of the correct answer. That C supplies the name and this is receipted with a positive evaluation, confirms the 'teacherly' status of turns 4-6, initiated by the wh-question

(as question- with-known-answer, Macbeth, 2005). Successful resolution of the search is evident, however, because C resumes her news telling at line 7, and incorporates the item that was searched-for and retrieved.

Extract 5 also illustrates coordinated use of verbal and non-verbal *hinting*.

Extract 5: Verbal and non- verbal hinting (Wh-question)

The group is writing a story about the seaside and discussing characters that each child created in a previous lesson. There are pictures that the children have drawn to represent their own character and story setting which are attached to card so that they stand up on the table.

```
70   T   ⌈Put your setting up first      ⌉
         ⌊ ((lifts picture of C's setting ⌋

71       (0.3)

72   T   ⌈That's it so we can all see (.) right=who's this. ⌉
         ⌊ ((holds sea setting::::::::: stands Jack up::::: ⌋

73   C   Jack

74   T   ⌈What does Jack want  ⌉
         ⌊ ((holds  Jack up::::::)) ⌋

75   C   (0.3) he wants to: hh (0.7)


→ 76   T   We:ll.=⌈ where're they ↑going first?      ⌉
→            ⌊((points to sea in setting  picture)) ⌋


77   C   go fishing

78   T   He wants to go fishing right so what is he gonna sa:y?

79   C   (1.0) He say friends d'you wanna go=d'ya wanna go fishing
```

At line 74, T uses a '*plot invitation*' (Radford *et al*., 2006) in order to elicit an idea from C about her character Jack. Following an initial silence at line 75, C begins to formulate her answer. She changes T's 'Jack' to the pronoun 'he', inflects T's 'want' to form 'wants' and produces a portion of the infinitive form of some verb before exhibing word finding behaviour. T's next turn begins with 'We:ll', as if she is taking

a moment to decide on the nature of her move. Her verbal hint is constructed as a wh-question ('where') that appears to specify a location. There is a further potential clue in the verb that the characters will be 'going' somewhere. The accompanying gesture indicates the semantic domain of a relevant response (something to do with the sea). These simultaneous clues provide different, but complementary, sources of information for C. Contrast the wh-question at line 75 (an *invitation*), where C was free to select her own idea, with the wh-question that works as a *hint* and thus narrows C's range of possible choices. Despite these constraints, 'go fishing' (line 77) is C's own, rather than T's, proposal and is consistent with the turn started at line 75. It is interesting that at 77, C produces the phrase without hesitation whereas at 79 there is a false start and self-repair before its production.

Extract 6 shows a variant of hinting that emerges from prior talk where the child employs a pronoun ('it') that has an unclear referent. As a display of its lack of clarity, the adult constructs her next turn in such a way that it specifies the nature of the repairable. The other-initiation does not, in this case, lead the child to self-repair, and a possible explanation will be explored later.

Extract 6: Hinting to specify the nature of the repairable
The teacher and Ciara are using the 'speaking book' as a focus to talk about some favourite outer space pictures that have been brought from home.

    67 T   Mm did you ch<u>oo</u>se that picture

    68 C   Yeah

    69 T   Yeah (.) g<u>oo</u>d.

    70   (2.0)

    71 T   And there's a=you've got another picture with an <u>a</u>stronaut

    72   haven't you.

    73 C   Yeah

    74 T   D'you think that's the same one?

    75 C   Yeah, trying to g<u>e</u>t to uh: (0.2) it

           x------------book--------,,,--P

→ 76 T   **Trying to get to what?**

```
77   C   Trying to get to ⌈ like  that,  that    ⌉
                           ⌊((points at picture))⌋
```

The question and answer sequence (lines 67-75) are the participants' way of generating a topic about the space pictures. While T's closed question at line 74 gets a minimal response ('yeah'), C orients to the topic generating status of the preliminaries and immediately supplies more information. Consistent with other data showing how topic is generated in this activity (Radford *et al*., 2006), the information supplied at line 75 represents C's own idea, ostensibly about the journey of the astronaut. C displays problems, however, during an attempt to name the destination. Following a brief search a pronoun is used that would not appear, from these data, to have a prior referent. T's request for specification is formulated as a repeat of C's turn up to the point at which she had difficulty. The final 'what' element indicates clearly and precisely the location of the trouble source (turn final) and that the item requires specifying. Rising final intonation informs C that a response is required at this juncture, confirmed also by T's shift of gaze that positions C to take the turn. C's next move, constructed largely as a repeat of the prior turn at 75, displays an understanding of the need for repair.

Supplying a model

In oral language lessons, where children have specific language difficulties, both *candidate answers* and *candidate corrections* of lexical items have already been reported (Radford, in press). These two practices are different from those discussed so far in this paper because they provide a model of the child's source of trouble or 'error'. Our final examples show such phenomena in the context of word searching. Firstly, Extract 7 shows two '*offers of a candidate answer'*, which is a common action in mundane adult conversation (Pomerantz 1988) as well as in institutional talk, such as therapeutic sessions (Gale and Newfield 1992). A key feature is that they are done in such a way that allows the co-participant to make the choice regarding whether or not to accept the candidate answer. In this example, the candidate offers are responses to the child's persisting difficulty with word searching. It is important to note that by

offering a candidate item, a lexical example of what is searched-for can be heard by C. In this sequence, C through repetition shows acceptance of the first candidate as a solution to the search.

Extract 7: Offers of a candidate answer

Extract 7 is a continuation of 6, where T's specification of the repairable failed to lead the child to self-repair.

```
                x-----------book-------,,,--P
76   T   Trying to get to what?

77   C   Trying to get to ⌈like that, that        ⌉
                          ⌊((points at picture))⌋
```

→   78   T   **To that pl<u>a</u>net?**
       79   C   That planet.
       80   T   Yeah? how comes he was floating ar<u>ou:</u>nd like that
       81   C   ****he got stuff ss mm in his in his in him
→   82   T   **He's got <u>oil</u> n him?**
       83   C   Yeah.

At line 77, C's search for the elusive word continues by repeating part of her prior turn that T had repeated. Instead of saying 'it' again, she now displays her search with 'like' and substitutes a deictic term ('that') without a noun. C's gesture at the picture furnishes T with a visual resource to assist guessing at the target noun. At 78, T partially repeats C's turn and adds the candidate lexis. The upward final intonation ('?') suggests that she is offering the candidate item for confirmation. Downward intonation would have, in contrast, conferred the status of a candidate correction (Radford, in press). C's repeat of T's phrase at line 79 displays acknowledgement of the candidate, in the same way as it is accomplished in aphasia interaction (Oelschlaeger & Damico, 1998). The second search turn, at line 81, finds C using 'stuff' as a substitution followed by a search for another noun (perhaps 'body'?). She only produces a phrase repetition ('in his in his') before settling for the less specific 'in him'. The teacher offers the candidate answer 'oil' as a replacement for 'stuff' and

the selection is confirmed by C with 'yeah. These candidate offers emerge in an environment where the adult draws on prior talk to gain clues about the lexical item under consideration, facilitated here by a shared visual resource.

The next example (8) also illustrates a candidate offer but, grammatically, it is embedded in a two-choice question. In line 4, the teacher is orienting to A's searching in lines 1-3. Instead of offering single candidate, the adult gives the child a choice of two candidates. The design of an 'Is it X or Y' question is treated by A as an opportunity to select one of the candidates 'sad'. In this respect, the practice is similar to the previous example whereby the child is able to make the final decision about whether or not to accept the candidate that is offered by the adult.

Extract 8: Two-choice candidate offer
The children are creating a story about a family. Five turns earlier T had invited A to retell the story so far, mainly character descriptions at this point in the lesson.

1   A   and (0.3) he got (0.3) baby? (0.4) a little tiny baby (0.2) a mum
          ((N points at baby…………………………………points at mum
2   (0.2) mum's crying (0.5) dad's happy? (1.0) a sister's (.) ha and
          ………………points at dad………………points at sister…………
3   (0.3) and and the and the sister's (.) uhhh
          ………………points at sister……………))

→ 4   T   Little girl. **Is she happy or sad.**
5   A   Sad
6   T   Why?
7   A   Because when she gets to the bus stop she be happy

Occasionally, when searching, children make an erroneous attempt at a word which is called a substitution, or produce a semantically related phrase or vague referent, the term for which is circumlocution. Correction is the adult's response to such phenomena when it is located in the next turn following the child's attempt and presents a corrected version which contrasts with the error or unclear referent. Corrections, in adult talk, can be exposed or embedded (Jefferson, 1987). In the next

example shown here (9) the *correction* is embedded. A's turn that displays search behaviours can be found at line 3. Lexically speaking, she fails to make clear the subject of the sentence, using an unspecified pronoun 'them'. In response, T indicates positive receipt with 'okay alright' and then recasts the turn by inserting the candidate, 'daddy', which serves to disambiguate the referent. A silence follows, a space in which A could have repeated the candidate offer, but as she does not take the turn, T pursues topic with a further question.

Extract 9: Embedded correction

This takes place in the final stages of the lesson when the children are near to the end of end of their story.

    1 A   and and she said to them s<u>o</u>rry

    2 T   Okay. And we want one thing (.) can you think of one thing to finish.
                   ((points to flipchart))

    3 A   uhm (.) and then (0.3) then and uhh them went that way and
                               ((points to picture…………….

→   4 T   **okay alright <u>dad</u>dy went this way**

    5   (0.8)

    6 T   Which way did daddy go?

    7 A   This way

Our final example illustrates an *exposed correction* which means that it is isolated from other work that the adult's turn could be doing. *Exposed correction* performs different work from hinting because the child does not hear additional semantic information that might allow her to self-repair. Furthermore, *exposed correction* differs from a candidate offer because it is done in a way whereby the child has no choice whether or not to accept the candidate; the relevant next turn is for the child to repeat the adult's correction of the lexical item.

Extract 10: Exposed correction

The teacher and Ciara are engaged in a speaking book activity. They are discussing a postcard that the child has brought from home that shows an abstract art picture, bought at the Tate Modern, a London art museum.

```
1         (T and C open the speaking book and look at the pictures)

2    T    Can you tell me⌈ about  that  one     ⌉

3                       ⌊((points at picture))⌋

4    C    It's like a foot (.) like foot coming out the (.) hole and it's not real

5         one

6    T    It's not real no::. and is the rest of the person behind there?

7    C    No

8    T    No and where did you get this picture from?

9    C    Uh:: (0.2) the (.) mo modern (.) ate

→   10   T    **Tate Modern.=**

11   C    =Tate Modern=

12   T    =yes the Tate Modern you went there (.) with your mum and dad

13   C    Yeah and my brother
```

T initiates topic at line 2 with a topic initial elicitor (TIE: Radford and Tarplee, 2000). TIEs are suited to generating either a news report or a description from the child, and topical information is forthcoming at lines 4-5. In order to pursue C's topic, T uses an itemized enquiry (the wh-question at 8), although it may not be a genuine enquiry, given T's later display of confirmation and receipt at line 12. C responds with searching and an attempt at a noun phrase. How the phrase is constructed in line 9 is that C targets the second word 'modern' and this is successfully produced after an initial attempt at the first syllable. The second word ('ate') is a partial version but hearably similar in so far as it rhymes. Indeed, despite C's incorrect word order, T interprets the phrase as an attempt at 'Tate Modern', a London art museum, and supplies the corrected version (line 10). The correction is designed with final downward intonation and no other lexical components which also confirm the corrective status of the turn. An alternative strategy following an error would have been an other-initiation of repair. *Exposed correction* is distinctive because the adult provides the corrected version, offered for repeat, in contrast with *hinting* or *prompting* that are typically treated as invitations to self-repair.

DISCUSSION

This analysis has addressed the first research question by illustrating, with precision, ways in which adult participation in children's word searches is accomplished. Given the potential implications of the findings for educational and clinical interventions, it is important to consider how such practices vary in terms of assisting the child to self-repair (research question 2). A key issue for intervention is the tension for the teacher/ therapist between supporting the child's independence in searching and providing the necessary degree of assistance for success in interaction.

Whilst the practices of hinting and prompting initiate self-repair, they differ in terms of how they are formed, as well as how they are treated. Prompted completions work as '*word retrieval elicitors*' as follows: the adult partially repeats the child's incomplete phrase ('fishing::') whilst retaining the mid pitch of the incomplete phrase. This has the sequential effect of cueing the child to say 'net', with lower pitch height, thereby completing the noun phrase. In non-verbal prompting the adult employs resources such as gaze and gesture, without verbal clues or supplying a model, so the child must search for the word/phrase herself. As the entire adverbial phrase is missing ('We went to ___'), the child is thus presented with a challenge and fails to self-repair. A series of two non-verbal prompts is found in an environment where the child fails to self-repair and a further intervention device is warranted.

Hints operate differently from prompts, since they provide verbal clues which appear to target related information. As wh-questions, hints at first appear to have a 'teacherly' design, because the child treats them as requests to supply the information sought. As a closed question ('who's this?'), formed alongside a pointing gesture, this strategy narrows the range of possible responses. In specifying the nature of the repairable, ('trying to get to what?'), the adult narrows the syntactic domain from which the child can select a response which affords some clue regarding the trouble source. Yet, the child must rely on her own semantic resources to retrieve the lexical item since no specific clue or model has been offered.

Use of prompting and hinting to assist self-repair is reported in other pedagogical interactions, but there are important differences. For instance, in second language writing conferences, students make syntactic errors such that adults' hints are interpreted by students as requests to self-repair their errors (Koshik, 2005). In high

school history lessons, children interpret hints as requests to give the correct answer, given the teacher's superior knowledge and teaching agenda (McHoul, 1990). By contrast, in these word search data, syntactic errors are not treated by the participants as a matter for repair. Nor, in most examples, is the teacher pursuing a typical 'question-with-known-answer' sequence (MacBeth, 2005). Use of a prompt or hint indicates that the adult treats the incomplete turn construction unit as a trouble source. Yet, the child hears these devices as invitations to self-repair and, especially during hinting sequences, succeeds in retrieving the word or phrase. The adult's positive receipt (e.g. Extract 1) is confirmation that word retrieval is the business at hand.

Four practices do not initiate self-repair because they offer the child a model of the target lexis. In the embedded correction example, the model is located in the next turn but the child fails to do a repeat. In contrast, in exposed correction ('Tate Modern.'), the model is located in the next turn following the circumlocution and thus provides a highly contingent lexical contrast. The model is further marked by its placement in turn-final position. Downward intonation signals the corrective status of the move. That the correction is heard and accepted by the child is shown by the next turn repetition. In contrast, candidate word offers ('To that planet?'), provide a model that is syntactically fitted to the child's prior turn. This device differs from correction because it is done with rising intonation, as if the model is more tentative and could be either accepted or rejected. The child accepts by repeating which successfully resolves the search. Similarly, two choice candidates list the options from which the child may select but afford the child the opportunity to make the final decision about which to accept. Offers of candidate words are reported in aphasia interactions (Laakso and Klippi 1999; Oelschlaeger, 1999) and in classroom data with children who have specific language difficulties (Radford, in press). The current findings are different from the attempts at candidates which are reported as 'guesses' in aphasia research (Laakso and Klippi, 1999). In the educational context discussed here, the adult shares a visual resource with the child (i.e. a picture) which means that guessing is less necessary and may explain why the adult is able to offer a candidate that is accepted by the child.

The third and final research question concerns the sequential relationship between practices. What happens over the sequence of discourse when a first initiation of self-

repair fails to resolve the search? Does the adult withhold exposed correction and candidate offers and first use prompts and hints that are suited to self- retrieval of the word? Some sequential patterns emerged which, for ease of illustration, are shown in simplified form in Figure 1.

PLACE FIGURE 1 NEAR HERE

Sequence (A) was seen in Extract 3. The first gesture provides a contingent prompt but is not taken up by the child in the next turn. As the second gesture is visibly iconic, representing the motion of rocking a baby, it offers the child an additional semantic clue to assist in retrieval of the item. Pattern (B) was seen in Extracts 2 and 4. As the adult's non-verbal prompt (placing a pen tip on a photo) was treated with silence, she used a verbal hint (wh-question) to pursue the repair. The hint was produced in supplement to the non-verbal prompt, as if offered as an additional clue, and it achieves resolution of the search. Pattern (C) was shown in Extracts 5 and 6 where a first teacher action, specifying the repairable, led to further searching rather than to self-repair. The adult's next move, offering a candidate, provided a model of the searched-for item that is accepted. More data will be needed to check if such an ordering of practices is systematic in classrooms and other types of interaction.

Close inspection of the current dataset has uncovered some robust patterns and shown, in some detail, how features of each practice provide varying degrees of assistance to the child in retrieving words. As the teachers were purposefully selected because they were highly qualified and experienced and worked on a daily basis with speech and language therapists, the findings are somewhat 'ideal' rather than typical. As such, these discourse patterns offer those planning training and clinical courses examples of strategies that are workable in the naturalistic context of the classroom. More specifically, practitioners will gain a better grasp of how non-verbal prompts afford a high level of independence to the child for self-repair but offer limited verbal clues so that the child has to rely on her own resources. By contrast, in offering a candidate, the adult supplies a potential resolution to the search and, especially when exposed as corrections, limits the child's independence to self-repair. However, lack of space has

prohibited identification of further strategies. We therefore need to analyse data with different participants since it is possible that the findings are an artefact of the particular dyads. Given the helpful professional implications gained from research into aphasia clinical interaction, it will clearly be worth pursuing more research with children. Future work might also wish to consider more fully the role of gesture, such as picture pointing and how it is coordinated with the use of gaze. These additional resources have already been shown to offer shared information to the participants during book-reading (Radford and Mahon, 2009).

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Table 1: Nature of primary language difficulty

Child	Receptive	Expressive syntax	Phonology	Verbal dyspraxia	Naming	Word meaning	Pragmatics
C	2	2	0	0	3	2	1
A	3	3	1	0	3	3	3

Key: 0 = none; 1 = mild; 2 = moderate; 3 = severe

Table 2: Associated difficulties

Child	Confidence	Self-esteem	Behaviour	ASD	MLD	Spelling	Writing	Reading
C	√	√	√	X	X	√	√	√
A	√	√	√	X	√	√	√	√

Key: √ = yes; X = no
ASD = autistic spectrum disorders; MLD = moderate learning difficulties

Appendix 1: General transcription conventions

System originally developed by Gail Jefferson (for example seen in 1987) and presented in Ten Have (1999).

(0.5)	The number in brackets indicates silence by tenths of seconds.
(.)	A dot enclosed in a bracket indicates a gap in the talk of less than two-tenths of a second.
[ ]	Square brackets between adjacent lines of concurrent speech indicate the onset and end of a spate of overlapping talk.
((points))	A description enclosed in brackets, and written in italics, indicates a non-verbal activity. For example *((points at picture))*.
:::	Colons indicate that the speaker has stretched the preceding sound or letter. The more colons the greater the extent of the stretching.
( )	Empty parentheses indicate the presence of an unclear fragment of tape.
(guess)	The words within a single bracket indicate the transcriber's best guess at an unclear utterance.
.	A full stop indicates a stopping fall in tone. It does not necessarily indicate the end of a sentence.
?	A question mark indicates a rising inflection. It does not necessarily indicate a question.
↑↓	Pointed arrows indicate a marked falling or rising intonational shift. They are placed immediately before the onset of the shift.
under	Underlined fragments indicate some form of stress via pitch and/or amplitude.
< >	Bracketing an utterance indicates speeding up.
LOUD	Uppercase indicates especially loud sounds relative to the surrounding talk.
.hhhh	Hearable inhalation

Appendix 2: Transcription of gaze, gesture and prosody

Gaze and gesture adapted from a system used by Oelschlaeger & Damico (2000), originally devised by Goodwin & Goodwin (1986). Marking of pitch height follows the conventions used by Corrin, Tarplee & Wells (2001).

1. Gaze of the speaker is marked above the turn at talk.
2. **x** marks the beginning and end of the direction of gaze.
3. ,,, indicates a shift of gaze from one direction to another.
4. Specific gaze direction is described orthographically through indication of the person or place or the direction of the gaze (e.g. initial of person, or book). Continuous gaze at an object is indicated with a broken line: x---book---x.
5. Gesture is described orthographically in italics e.g. *(points)*; where there is simultaneous talk, it is placed below the spoken words. Continuous gesture is indicated with colons *(book:::::::).*
6. Pitch height is shown orthographically above the turn at talk, between two straight lines that indicate the speaker's typical range.

Figure 1: **Sequential relationship between prompting, hinting and supplying a model**

	(A)	(B)	(C)
Adult move	**NON-VERBAL PROMPT** *(Points at baby picture)*	**NON-VERBAL PROMPT** *(Places pen tip on photo)*	**VERBAL HINT** (Specifying the repairable) "Trying to get to what?"
Child move	↓	↓	↓
Adult move	**ICONIC GESTURE** *(Rocks cradled arms)*	**VERBAL HINT** 'Who's this'	**SUPPLYING A MODEL** (offer of candidate) 'To that planet?'
Child move	'baby'	'Santa'	'that planet'