The organization of repair in SSLD classroom discourse: how to expose the trouble-source

In Journal of Interactional Research in Communication Disorders (2012)

FINAL AUTHOR COPY

Julie Radford
Institute of Education, University of London, Psychology and Human Development, 25 Woburn Square, London WC1H 0AA

Judy Ireson
Institute of Education, University of London, Psychology and Human Development, 25 Woburn Square, London WC1H 0AA

Merle Mahon
University College London, Human Communication Science, Chandler House, 2 Wakefield Street, London WC1N 1PG

All correspondence with respect to this article should be addressed to:
Dr Julie Radford, Psychology and Human Development, Institute of Education, 25 Woburn Square, London, WC1H 0AA., UK
Email: j.radford@ioe.ac.uk Tel: 020 7612 6295

ABSTRACT

As children with specific speech and language difficulties (SSLD) have problems processing language, they are vulnerable in the classroom since it is primarily an oral environment. Repairs offer a potentially useful source of information for the language learner but, to benefit from feedback about their errors or misunderstandings, children must notice the corrective potential in the stream of educational discourse. Repair practices (245) with children with SSLD were analysed quantitatively in terms of age and type of activity. They were also analysed sequentially, using conversation analysis. Repairs dealing with form (grammatical and phonological) were not immediately taken up by the children whereas those concerning meaning (lexical and content) mostly led to self-correction. One explanation is that, during form repair, the adults' corrective moves are embedded in turns that perform multiple work, so that children attend primarily to meaning. Designs that may be better suited to exposing corrections are discussed, with particular reference to features of prosody.

Key words: classroom discourse, conversation analysis, repair, specific language impairment

INTRODUCTION

Many children experience specific speech and language difficulties (SSLD) that are not accounted for by primary hearing, neurological or cognitive difficulties. A review of services in the UK led by Bercow (DCSF, 2008) shows that, during their school years, these children spend a large proportion of their time in mainstream classroom settings where support is provided from teachers, speech and language therapists and teaching assistants. A key priority of these professionals, depending on the individual language profile, is to develop the child's grammatical, lexical and pragmatic language skills. A study by McCartney, Boyle, Ellis, Bannatyne and Turnbull (2011) indicates that classroom interventions can be effectively delivered by trained therapy assistants but, when they are supported by school-based assistants, they are less effective. As Radford, Blatchford and Webster (2011) suggest, there is an urgent need to train teaching assistants who work with children with special educational needs in oral techniques.

Children with SSLD are slow at real-time processing of language, which may be a result of difficulties in sustaining attention (Montgomery, 2008). They are therefore vulnerable in classrooms since they are primarily oral environments. English grammatical morphology, in particular, presents both acoustic and articulatory challenges, since syllables like past tense *'ed'* and third person *'s'* are perceptually weak in the stream of speech. In the classroom, as these grammatical markers are unstressed, they are particularly susceptible to being unnoticed. Furthermore, processing difficulties are amplified where there is background noise from children working in groups as well as the outside environment (Shield and Dockrell, 2004).

Owing to the very nature of a language difficulty, trouble sources associated with both form and meaning are a regular feature of the child's discourse with teachers and teaching assistants (Radford, 2010a; Ridley, Radford and Mahon, 2002). Participants deal with trouble sources through sequences of repair (Schegloff, Jefferson and Sacks, 1977) and, when a hearer locates an error, by correction (Jefferson, 1987). Repairs and corrections are very useful clinically and educationally since they provide potentially rich sources of information for the language learner. Indeed, one of the main techniques employed by speech and language therapists/pathologists and teachers is called the 'recast' which presents the child with adult-like models of grammar and lexis (Fey and Proctor-Williams, 2000). Saxton (2005: 28) argues, as shown in extract 1, that the next turn position renders the recast salient because of its contingency with respect to the child's error.

(1) Next turn recast

1. Child: He BITED someone
→2. Adult: He BIT someone?
→3. Child: Yeah

(Saxton, 2005: 28)

Our central argument is that there are potential ambiguities in 'recast' sequences, as experienced on-line in the classroom that have yet to be examined in detail. In this paper, using conversation analysis (CA), we examine classroom discourse from the

perspective of the participants. We are interested in why adults and children design their turns in a given way, including both lexical and prosodic choices. Such features may explain how the participants respond to the previous move and have implications for what happens in the following turn(s). From Extract 1, let us discuss the child saying *He BITED someone*, followed by the subsequent adult reformulation, *He BIT someone?*. In the repeat, the adult displays a candidate understanding of the child's previous turn. The repeat, however, is modified (Stivers, 2005) not only with a lexical change but also with final pitch rise on *someone?*. The child hears this move as a check to confirm that the heard interpretation matches what she intended to say. She displays agreement in the next turn through *yeah* but it could be accomplished by a nod of the head (or a display of disagreement if the adult's interpretation did not match). As such there is a possible tension, from the child's perspective: should she orientate to correction of the verb form or focus on meaning by providing a clarification? When a modified repeat is located in such a side sequence, and the corrrection is not marked out in some way, the child may be attending to meaning rather than to the correction of grammar. Given the processing contraints experienced by children with SSLD, the potential of a 'recast' as an intervention device is thereby weakened.

Another relevant concern that has been addressed by conversation analysts is whether corrections are EMBEDDED as opposed to EXPOSED. Embedded correction occurs when a corrected version is located within a turn that continues the discourse topic (Jefferson 1987: 93). As an illustration, in extract 2, the repair of the customer's use of *wales* (line 1) is embedded in an attendant activity (which on this occasion is the joint search of the customer and salesman for a piece of piping).

(2) Embedded correction

(*Customer in hardware store looking for piece of piping)*
1. Customer: Mm, the ***wales*** are wider apart than that.
2. Salesman: Okay, let me see if I can find one with wider ***threads.***
3. *(looks through stock)* How's this?
4. Customer: Nope, the ***threads*** are even wider than that.
(Jefferson 1987: 93)

The customer orients to the salesman's more expert technical term *threads* (line 4) by repeating the correction. In this way, the speaker uses the vocabulary item modelled by the expert. Yet, the trouble sources of Jefferson's examples concern only lexical items and never grammar. Our concern is that, given their on-line processing difficulties, children with SSLD run the risk of not noticing embedded designs of grammatical correction. The primary attention of the speakers is directed at continuation of the discourse and not necessarily with the business of correction.

Exposed corrections, on the other hand, have potential to mark out the contrast between a child's error and an adult version. They therefore have more potential for assisting a child with a language difficulty to locate an error. Whilst embedded corrections occur within continuous discourse, exposed corrections isolate the trouble source from the surrounding talk (Jefferson 1987: 95). In extract (3) since *MICE* is

located in a turn that performs only the job of correction, one could argue that there is no ambiguity about the locus and nature of the trouble source.

(3) Exposed correction

1. Child: These mouse, mouses eat worms.
→2. Parent: MICE.
3. Child: Yeah.
(Wang 2005: 142)

Indeed, the exposed-embedded distinction influences the young child's subsequent rate of usage (Wang 2005: 142). Although embedded corrections are high in frequency with two-year-olds (93%), there is very limited usage of the corrected items by the child (2%). In contrast, there is a higher rate of exposed correction at 4 years and a much higher rate of subsequent usage by the child when the exposed variety is used at all ages. Wang concludes that exposed corrections have more strength for assisting the child to locate an error.

Furthermore, there are additional features of the parent's turn that serve the purpose of exposure. In line 2 of extract 3, the loudness on *MICE* marks a clear contrast with *mouse(s)*. Yet, by saying *'yeah'* the child appears to treat her mother's turn as doing confirmation since she does not self-repair. Another possibility is that the child hears it as a correction and agrees with the new version.

Many studies of repeated talk indicate that the function of repeats is to initiate repair (Schegloff et al., 1977; Selting, 1996), although they can accomplish other work such as affirming (Tarplee, 1996), confirming (Schegloff, 1996), mimicry (Couper-Khulen, 1996) or sustaining the topic (Tannen, 1989). The important concern for our analysis is the principle of *contrastivity* between the child and adult versions of the word or phrase (Tarplee, 1996). How a repeat changes lexically may be more obvious to the analyst but prosodic changes provide crucial information for the next speaker. When parents match the pitch contour of their young child's label, this is not treated as corrective (Tarplee, 1996). On the other hand, when the pitch contour of the repeat is different, the child does treat it as corrective and offers a re-doing of the label. Contrast in repetitions can also be indicated through loudness (Local, 1992; Stivers, 2005).

The design of repairs is of paramount theoretical and practical importance. As there is a considerable gap in naturalistic research concerning feedback in SSLD classrooms, the study describes practices of repair during oral language lessons. We consider features of prosody, such as loudness, silence, changes in intonation, and stress that could play a role in making the corrected form or meaning stand out in the stream of speech. Any potential cues that focus the child's resources on the contrast have potentially useful educational and clinical implications. The questions are:

(1) What types of repairs are available in oral language lessons?
(2) In what ways does the child's trouble source (form or meaning) influence the nature of the repair?
(3) In what interactional contexts do children take up the correction?
(4) Which design features in the adult's turn help to expose the trouble source (or otherwise)?

To answer question 1, using frequency counts and percentages of total instances, we explore the extent to which corrective input is available across three oral classroom activities and with children of different ages. The context of the activity is important because an educational activity such as story writing might lend itself to different opportunities for repairs to be taken up by the child than a less formal activity such as circle time. To address question 2, using CA, we set out in detail examples of repairs of form (phonology, syntax and morphology) and then compare with sequences that deal with issues of meaning (lexis and content). The third and fourth questions concern the potential of adult repair to provide corrective feedback to the child. In the discussion we re-visit evidence of responding to the correction, through the child's subsequent use of the adult's form. In particular, we show that the prosodic, syntactic and pragmatic characteristics of the adult's corrective turn have implications for the child's subsequent move. Special attention is paid to prosodic features that might mark out the contrast to make it salient, or that might interfere with hearing the correction.

METHOD

Participants and activities

As a CA study with an institutional focus, it will be useful for other applied researchers and practitioners to have details of the participants and the intervention activities. Three specialist teachers from two Language Resource provisions were recruited because they had an advanced qualification in the field of speech, language and communication and had extensive experience of specialised language teaching (Table 1). Their experience maximises the potential for carefully designed and implemented oral lessons where the goals are clearly focused on language learning. Six children with SSLD were chosen who ranged in age from 4;4 to 8;7. The children, according to their Statements of Special Educational Needs, had primary expressive and/or receptive language difficulties. Information about their language difficulties was obtained via a questionnaire that was completed by the teacher and therapist together based on their test data and reports (Table 2).

Table 1 Teachers' qualifications and experience

	Teacher X	Teacher Y	Teacher Z
Qualifications			
General Specialist	BA, Postgrad Cert Ed, Adv Dip (SLI)	Cert Ed, BPhil (communication)	BA (linguistics) Adv Dip (SLI)
Teaching experience			
Mainstream	-	12 years	3 years
Special education	10 years	5 years	-
Language Unit	15 years	14 years	10 years
Experience of training			
Speaking & listening	√	√	√
Attention skills	√	√	√
Learning support assistants	√	√	√
Mainstream staff	√	√	-

Table 2: Children's specific speech and language difficulties

Child	Resource Base	Teacher	Age	Gender	Receptive	Expressive syntax	Phonology	Verbal dyspraxia	Naming	Word meaning	Pragmatics
Ali	1	X	8y 7m	F	3	2	0	0	1	2	1
Beth	1	X	8y 3m	F	2	2	0	0	2	2	1
Chip	2	Z	4y 4m	M	2	2	1	0	2	2	1
Dina	2	Z	4y 8m	F	3	3	2	0	3	3	0
Ele	2	Y	5y 10m	F	3	3	1	0	2	2	1
Fay	2	Y	5y 5m	F	3	3	1	0	3	3	3

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

The teachers selected activities for video-recording that had an explicit oral language teaching agenda. Six activities were videoed over four consecutive weeks, totalling 24 language lessons. These lasted between 7-25 minutes, giving a total recording time of 265 minutes. Each lesson included two of the children in the sample, although during some tasks other children were present. There were three types of activity: book-sharing, group story writing and circle-time lessons. During book-sharing the talk concerned picture books; the younger children (Resource Base 2) talked about a standard children's text, whilst the older pairs (Resource Base 1) had exercise books in which pictures of personal interest, such as photographs, had been placed. In the story writing activity, small groups of 5-6 children were sitting close to the teacher. The younger group was required to write a story together and the teacher recorded their ideas onto a flipchart whilst the older children used picture boards to help them create individual stories. During circle-time 6-8 children sat together in a circle that included the teacher. In circle-time with the younger children, the teacher produced a model sentence (e.g. *I like eating apples*) and each child in the circle took a turn to copy the sentence with a personal variation (e.g. *I like eating pears/chips*). In Resource Base 1, the teacher with the 8 year-olds focused on social skills training during circle-time; for example they played games with toys that helped them to identify instructions that they had not understood.

Informed, written consent was obtained to undertake video-recording from all of the participants and from their parents. As they were video-taped, the opportunity to withdraw their participation was offered at any point. A researcher was present during all of the recordings and took field-notes. Observer effects were minimised by the researcher not interacting with the participants and by sampling over four consecutive weeks.

In terms of the analysis, the video-recordings were viewed repeatedly by the first author. Detailed transcriptions were made of the entire dataset, using the conventions developed by Gail Jefferson and presented in Have (1999: 213-4) (see Appendix 1). Next, a collection was made of 245 teacher-initiated repair trajectories. These other-initiations were divided into two types as used by conversation analysts (Schegloff, 2007: 101-4). First, there were instances where the teacher both initiated and carried

out the repair (other-initiated other-repair: OIOR); second, the teacher initiated the repair but invited the child to resolve the source of trouble (other-initiated self-repair: OISR) (Table 3). OIORs are comparable to recasts in the sense that the teacher not only orients to the trouble source, but also provides an upgraded model of lexis, phonology or grammar in the same turn. The child may subsequently orient to the teacher's version with a self-repair, or the interactional business may proceed without revision. OISRs are different because the teacher initiates the repair and subsequently the child carries out a self-repair (Table 3).

Table 3: Principal types of other-initiated repair

Repair type	Description and example
Other-initiated other repair (OIOR)	Repair initiated and carried out by the teacher *T: Here is a mountain see me sss* *Ch: Uhhm snow* *→T: Good try see me ↑ski* *Ch: Ski*
Other-initiated self repair (OISR)	Repair accomplished by the child in own turn but initiated by the teacher *Ch: We went all the way down we did* *→T: Down where* *→Ch: To see the sea*

Key: T=teacher; Ch=child

Next, we explored the patterns according to the environments in which OIORs or OISRs occurred. There was a strong influence of the type of trouble source. OIORs mainly dealt with form-related sources of trouble, including revisions of phonology, morphology and syntax. OISRs dealt with meaning-related issues such as lexical and/or content troubles (see Radford, 2010a, for a full analysis).

Following calculation of the frequency counts and percentages, qualitative analysis was conducted according to the inductive principles of CA. The perspective of the participants was used, as opposed to imposing categories created by the analyst. Claims are therefore warranted on the basis of the sequential implications of a turn, that is, a current speaker's turn projects a relevant turn by the next speaker. This relationship of 'conditional relevance' (Schegloff 2007 p20) between adjacent turns would necessitate the child to respond with an answer to the teacher's turn. This is evident in our data when the teacher initiates repair using a question which makes relevant a self-repair by the next speaker (Schegloff et al. 1977). Any design features of an action may be analytically relevant and we pay particular attention to grammar, lexical choice and prosody (loudness and intonation).

FINDINGS

Availability of repair types

The majority of the 245 instances were OISRs (146 = 59%), that is, occasions where the teacher initiated the repair but invited the child to carry it out in the subsequent

turn. There were also significant numbers of OIOR trajectories (99 = 41%) where the teacher initiated repair whilst offering a form or meaning revision in the same turn. Examining the patterns by age and type (Table 4), the younger children experienced a slightly greater frequency of repairs (53%) than the older group (47%). The younger group received more OISRs (68%) whilst OIORs were more common with the older children (68%).

Table 4: Proportion of repairs by age and type

	Total repairs per age group	OIOR (99/245=41%)	OISR (146/245=59%)
Resource base 1 (4;4-5;10)	131 = 53%	32/99 = 32%	99/146 = 68%
Resource base 2 (8;3-8;7)	114 = 47%	67/99 = 68%	47/146 = 32%

Table 5 illustrates that both types of repair were available in a range of oral lesson types. OIORs were most commonly provided in the individual book-sharing and the small group story-writing activities whilst circle-time afforded very few opportunities for this type of feedback. OISRs were spread across all three types of activity, including circle-time. The highest incidence of OISRs in story-writing may be accounted for by the nature of the activity: the teachers' invitations for the children to contribute new, and occasionally unexpected, ideas led to the need for sequences of repair to clarify meanings.

Table 5: Proportion of repairs by activity type

	OIOR	OISR
Book-sharing	52/99 = 53%	31/146 = 21%
Story-writing	44/99 = 44%	68/146 = 47%
Circle-time	3/99 = 3%	47/146 = 32%

Next, we provide a detailed sequential analysis of the full range of OIOR sequences. These are separated broadly into two types: the first section sets out practices relating to form; the second section describes those concerned with meaning.

The organization of repairs concerning form

A close relationship emerged between the type of trouble source and the subsequent nature of the repair. By far the most common OIOR sequences in these classrooms concern troubles associated with form (73%) whilst examples related to meaning

account for 27%. Most of the repairs entail the adult's orientation to the child's syntactic or morphological 'error'. In the next turn the teacher supplies a missing element of morphology: determiners, possessive 's', prepositions, copulas, auxiliaries and verb morphology or an alternative form (teacher version in bold): determiner (*a/**an**; that/**those***); irregular past tense (*done/**did**; break/**broke**; write/**wrote***); verb tense (*don't/**didn't**; have/**had***); negative auxiliary (*no/**don't**; don't/**doesn't**; do/**did***); prepositions (*to/**for**; to/**at**; to/**on***) and pronouns (*her/**his**; him/**they***). These phenomena were distributed across all of the children and therefore did not reflect an age-related pattern.

Some examples of grammatical error trajectories are now shown. In extract 4, teacher X is writing a story with a small group of 8 year-olds. At this point in the lesson the teacher is asking for ideas about the story's plot. The teacher uses a past tense verb (*did...do:*) in the first turn. Ali treats this as an invitation to suggest a problem for the characters. Her use of *don't* is an interactional issue that the teacher treats as an error since her grammatical correction (*didn't)* is placed in the third turn where evaluation of a correct answer is usually given. In this sequential slot it provides an adjacent contrast with Ali's version. The modified repeat of the verb (*didn't)*, unlike those reported by Stivers (2005), is not marked since the teacher does not use loudness or alter her pitch. In this way, the repeat is an embedded correction of form.

(4)

1. Teacher: What did they do: in the story.
2. Ali: They don't know what to play.
3. Teacher: They didn't know what to pla:y=did they.
4. Ali: Ye:ah, (.) but I know what the problem,
5. Teacher: Mm:,

The teacher also, in line 3, attends to the meaning of Ali's previous move. By repeating the content, the turn looks like a simple display of accepting an appropriate answer to her question. However, the final tag (*did they)* marks it as different: it initiates a side sequence focused on meaning to which Ali responds with confirmation. Indeed, Ali took this action to be a question that required confirmation by next supplying *ye:ah*. Given the lack of contrastivity on the repeated verb, the teacher's third turn would appear not to require a re-doing from the child (although there is stress on *did* in the tag).

A repair of form can also follow a child comment that introduces a new or tangential topic, as in extracts (5) and (6). In (5), the teacher and Beth are looking at her 'speaking' book in which she has stuck various favourite pictures.

(5)

1. Beth : That's her girlfriend,
2. *(points at picture of girl)*
3. Teacher: That's his gi:rlfriend ye::ah.
4. So what are they going to do:? (.)
5. Tell me about the aeroplane.

6. Beth : They fly off,

Whilst pointing to a picture of a girl, Beth gives a description that includes a female noun (*girlfriend*) and a female pronoun (*her*). In the second turn, the teacher's repeat is modified in so far as she changes the pronoun to *his*, treating *her* as an error. This correction of form is embedded since there is no marking of the contrast; in fact the teacher's stress is placed on the following noun, *gi:rlfriend*. The teacher also attends to meaning in the second turn: her use of positive receipt (*ye::ah*) displays acceptance of the content of the child's move. Furthermore, rather than pausing to allow Beth an opportunity to self-repair following the corrected pronoun, the teacher makes a topic continuing move, signalled by the topic shift marker *so*. One could argue that a self-repair may not be sequentially relevant here, in any case.

(6)

(The teacher turns over new page of book)
1. Teacher: So they go and have a look at their cha::irs,
2. (.)
3. Teacher: Oh de:ar.
4. (2.6)
5. Dina: [Dog,
6. [*(points at picture of bear)*
7. Teacher: You think that looks like a dog?
8. Dina: *(nods)*
9. Teacher: Yeah it does a bi:t,(.)but do you think it
10. i:s a dog?(.)or[do you think it's baby
11. [*(points at bear)*
12. be::ar.

In extract 6, Dina is looking at a picture book of 'Goldilocks and the Three Bears' with her teacher. In line 5, whilst pointing to a picture of a bear, Dina says *dog*, without determiner. The teacher's expansion of the single noun to a noun phrase (*a dog*) is placed in the subsequent turn. The contrast between the adult and child versions of the noun is marked because the teacher adds loudness and places it in final position. However, the teacher stresses only the noun and not the determiner, making it less salient in the steam of speech. Also, as in extract (5), line 7 simultaneously performs other important work in terms of meaning. One interpretation is that the teacher is simply displaying a candidate understanding of the semantic content of the child's *dog* turn. Yet, the pitch rise suggests that the turn starts a side sequence that concerns meaning. Given that the picture was of a bear, the child's nod of the head constitutes a trouble source for the teacher. She orients to the new trouble with weak agreement (*Yeah it does a bi:t,)*, which is followed by a disageement component that is introduced by the conjunction (*but*) (see Pomerantz, 1984: 72). The teacher's priority is with accuracy of the label, to get Dina to recognise that the label is a bear, not a dog. So, even though there is a version of the noun phrase in line 10, the determiner is not proffered for repetition by Dina thus the correction of form remains embedded.

Another type of correction sequence deals with grammatical reformulations. These contrast with the earlier examples because the trouble source is located in a turn that does not contain any hearable instance of incorrect morphology or syntax. Rather, the teacher modifies the grammatical stucture of the child's previous turn. In (7) the teacher is working in a small group and asking for ideas to write a story.

(7)

1. Teacher: [What's yo:ur idea?
2. [*(points at child)*
3. Ele : The boy is sad,
4. Teacher: The boy who was sad?
5. Ele: [(2.0)
6. [*(nods)*
7. Teacher: Okay.

In response to the teacher's question, Ele offers a candidate idea about a character (a sad boy). Instead of accepting the idea at line 4 with an evaluation, the teacher initiates repair to check that she has either heard or understood the child's response correctly. This turn, yet again, achieves simultaneous work on both form and meaning. The teacher upgrades the syntax of the child's turn by modelling a more complex syntactic structure, a relative clause, to create a potential 'title format' for the story that they are creating. The teacher's model *(who was sad)* does not include stress on the copula and thus there is no contrastivity and any 'correction' is embedded. Indeed Ele treats this as seeking agreement as opposed to requiring a re-elicitation.

(8)

1. Dina: I like a [bei::]
2. Teacher: Yes you're a [bei:bi]
3. (0.8)
4. Teacher: Mummy told me *(continues new topic)*

During the next extract (8), the participants are sharing a picture book. The teacher responds to the child's labelling of a picture over two turns: a first attempt by Dina followed by the teacher's repaired version in the next turn. Whilst commenting about a book picture, Dina's *baby* is made with weak syllable reduction, whereby the second, unstressed syllable is deleted (a common phonological process in young children). In line 2, the teacher responds affirmatively to the content of the child's move with positive receipt (*yes)*. In the same turn she also supplies a two syllable version *(ba:by)* [bei:bi] . The stress and lengthening of her first syllable renders the second (corrected) syllable less salient. Next, the silence provides a slot in which either party could take the turn. One option here would be Dina's self-repair but this opportunity is not taken and the teacher offers a new topic. Once again, as the turn contains a topic continuing move, the correction remains embedded.

(9)

1. Chip: Leg
2. Teacher: *(mouths 'lego')*
3. Teacher: Lego [lego
4. Chip: [lego

In extract 9, Chip is talking about a book into which he has put personal photographs. This extract differs from (4) - (8) because the correction is exposed and the sequential implications are different, resulting in a re-doing by the child. On hearing a single syllable version of *lego*, the teacher initiates self-repair with a non-verbal prompt in the form of an inaudible mouthing of the target word, making two syllables clearly visible to the child. Chip does not treat this as an invitation to re-do the label, so the teacher provides an audible model which she repeats. Her corrections are exposed because they are single words and there is loudness on both of the first syllables. Chip treats the first label as repair and repeats his teacher's version, including the stress. Although the teacher did not expose both of the syllables with a prosodic contrast, Chip did have access to additional information from her earlier visual prompt.

The organization of repairs concerning meaning

In terms of the overall organisation of repairs of meaning, they mainly involve exposed correction of lexical items. In (10), whilst writing a story with the teacher, Fay is searching for an elusive word and makes a partial attempt. The adult orients to this struggle by offering a modified repeat that is recognised and promptly repeated by Fay. Whilst sharing a picture book, Dina's search for a lexical item in (11) results in a guess which is not accepted by the teacher. She gives encouragement in response *(good try)* but does not accept it as, instead, she supplies a correction. In both extracts the corrections are exposed, since they are only doing the job of correction, and other business is suspended until the participants have resolved the matter.

(10)

1. Fay: uhhm (.) the (.) mo=modern ate,
2. Teacher: Tate Modern=
3. Fay: =Tate Modern=
4. Teacher: =Ye:s the Tate Modern. you went there.

(11)

1. Teacher: Here is a mountain see me ss::,
2. Dina: (0.4) uhhm sno:w
3. Teacher: Good try. see me ↑ski
4. Dina: Ski,

A notable feature of lexical repairs is the phonological similarity between some of the child's lexical errors and the adjacent repair, for instance *much* → *more; risk* → *rise; snow* → *ski; clip* → *paper clip*. The similarity possibly

made it easier for the teacher to produce a revision. Indeed, the latching of Fay's repeat in (10) suggests that she instantly recognises that repair is the agenda.

The vast majority of lexical trouble sequences entailed self-repair of the troublesome lexis following the teacher's exposed correction. The design of the correction might explain the successful repeat by the child: in (10) it is a single lexis and is not doing other work; in (11) it is placed in final position and with marked prosody (pitch rise and loudness). Successful self-repair of lexis was accomplished by even the youngest children (Dina is 4 years old).

(12)
1. Teacher: You and M are doing=what are you doing?
2. Chip: We're doing monsters like this,
3. Teacher: That's ri:ght(.)you're pa:inting the monsters
4. Chip: Painting.

In lexical reformulations, like grammatical reformulations, the trouble source is not evidently an error when the child's and adult's versions are compared. In extract (12) Chip is talking about a favourite picture book. His turn (*doing monsters*) responds to the adult's question and she accepts it positively with 'that's right'. The teacher's subsequent move offers a lexical alternative (*painting)* to the child's verb. This re-doing provides a semantic upgrade in the sense that the child's version is vague and the adult's alternative is more precise about the nature of the activity. Chip's repeat of the teacher's verb in line 4 is interesting because he would appear to be treating the teacher's move as a correction. His success at self-repair may have been helped by the teacher's exposure of the verb; the first syllable is strethed and is expressed with emphasis compared to the child's initial verison.

The final type, although apparently dealing with lexis, is distinctive because it concerns the content of the discourse. During lexical repair the joint concern of the speakers is with labelling, an orientation to a version of a lexical item that is amended in some way by the adult. In contrast, during content type repairs, the issue for the speakers is the truth or accuracy of a prior turn. In extract 13, a small group of 8 year-olds are writing individual stories with their teacher. In line 4, Beth makes a claim about the name of a character in her story. Her claim is tentative since she prefaces it with (I think) and her turn ends in rising intonation. In line 6 the teacher challenges the accuracy of the name and, repeating the mitigated *(I think)* proposes an alternative name, *Lucy*. The is done less tentatively since the final intonation is falling. Indeed, by repeating the name in the next turn, Beth treats this as a correction.

(13)
1. Teacher: I've got thre:e characters, do you remember
2. their names?
3. *(more talk about Ben, the first character)*
4. Beth: I think that one was Susan?
5. *(points at girl picture)*
→6. Teacher: I think that one was Lucy.
7. Beth: Lucy.
8. Teacher: Lucy and (.) [who was this?

```
 9.                          [(points at boy  picture)
 10. Beth:    uhh I don't know,
 11. Teacher: Jack wasn't it? (    )
→12. Beth:    [It's Polly.
 13.          [(points at girl picture)
 14. Teacher: Polly, not Lucy, Polly wasn't it.
 15. Beth:    [Ben, Polly
 16.          [(points at boy, then girl picture)
 17. Teacher: Ben, Polly and Jack
```

The initiation of content repair was not only available to the teacher, but also to the child. In line 12, it is Beth who challenges the teacher's earlier correction about the name of her character. Beth's correction is upgraded from her earlier claim in line 4. This time it is not mitigated, but exposed with stress on the name and downward intonation. In orientation to this, the teacher (at 14) self-corrects with a three part design: first she repeats Beth's correction (*Polly*); next she explicitly rejects her earlier claim from line 5 (*not Lucy*); finally she repeats again with a confirmatory tag (*Polly wasn't it*). It is consequently Beth, at 15, who fulfills the evaluatory function of receipt of a correct answer that is more typically attributed to the teacher.

Summary

This analysis of 245 classroom repairs demonstrates that they can be helpfully separated into form and meaning repairs, a division that is determined by the nature of the child's trouble source. During repairs concerning grammar, the teacher's moves perform multiple work: they simultaneously attend to both form and to meaning. When repairing form, teachers offer a contingent upgrade of the child's grammar or phonology that is placed in an adjacent turn. Any corrective work, however, remains embedded since there is no contrastivity. The children do not treat these embedded repairs as invitations to redo their grammar.

In terms of meaning, teachers initiate side sequences that seek confirmation that either the child has given a correct response to a teacher question or clarification that the teacher has understood them correctly. These turns are designed with positive receipt tokens (e.g. 'yeah') that display acceptance of the content of the child's turn. Repairs addressing meaning attend to lexical errors, lexical upgrade and issues concerned with the content or accuracy of the talk. Significantly, these corrections are exposed by various means: produced as an isolated word, or in word final position, and by use of contrastive stress. Since, exposed corrections make relevant a re-elicitation, the child repeats the adult's model.

DISCUSSION

Availability of repair in the classroom

Our findings show that teachers use a range of repair types in oral language lessons. OISRs are more common than OIORs, which corresponds to the findings from secondary geography classrooms (McHoul, 1990) and second language (L2) lessons

(Seedhouse, 2004). In terms of age, children as young as four are able to engage in OIOR sequences. Size of group was not an issue in these data since both dyadic book-sharing and small group story writing activities afforded similar opportunities for these types of feedback. Circle-time with the younger children, in contrast, generated very few instances since the turn-taking system did not permit the teacher to engage in third position repair. This issue is explored in detail in Radford, Ireson and Mahon (2006). Considering the implications for other oral language lessons, we would speculate that whole class teaching would be least suited to repair because any one child would receive a much smaller proportion of teacher turns. A teaching assistant, on the other hand, could fulfil the role of providing individual feedback to the child, on a one-to-one basis, given appropriate training, as demonstrated in Radford, Blatchford and Webster (2011).

Influence of the trouble source (form or meaning)

When the relationship between the child's trouble source and the nature of the repair was examined, a range of distinctive patterns emerged. Repairs dealing with form are much more common than those concerning meaning (73% vs. 27%), although two contextual factors could contribute: (a) the influence of the nature of the activity and (b) the effect of the individual child's language profile. The book-sharing and story-writing activities provide extensive opportunities for the generation of the pupils' own ideas, which afford next-turn repair opportunities to address content, lexis and grammar. In contrast, the circle-time turn-taking system with the younger group does not permit a teacher third turn, as children speak in a strict sequence round the circle. As the teacher has no opportunities for follow-up turns, grammatical errors remained uncorrected and unclear meanings cannot be addressed for fear of interrupting the flow (see Radford, Ireson and Mahon 2006, for a fuller discussion). The current study included children with receptive and expressive language difficulties. It did not, however, involve children with primary phonological difficulties. Further research could extend the dataset in order to explore the qualitative patterns of repair associated with other types of language difficulty. A recent study was undertaken to examine the patterns of repair associated with word finding difficulties (Radford, 2010b).

Uptake of the corrections

Our third question is of particular interest to educators and speech and language therapists/ pathologists. We asked whether there is evidence of that the teacher's input serves a corrective function, as determined by the child's use of the teacher's form/lexis in the next turn. Our analysis indicates that different interactional contexts have distinctive effects on repetition of the teacher's revision. Repairs of meaning, although less frequent, are shown to be much more effective than repairs of form; feedback following meaning repairs led frequently to self-repair by the child whereas repairs of form rarely did (but see extract 9). Simply because a child fails to immediately copy a revised version does not mean that the input could not make a contribution to language learning. What is striking in our data is that the patterns of form and meaning repair are distinctive in terms of the child's uptake. The immediate resolution only of the meaning repairs therefore warrants an explanation. An account based on the current analysis rests on the detailed design features of the turns and how

they might assist in exposure of the trouble source. These issues will now be explored in the next section of the paper.

How to expose the trouble source

Our final question, given the processing problems of children with SSLD, addresses the extent to which repairs are suited to exposing the trouble source and thus assisting the child to locate material for revision. The evidence suggests that, during naturalistic discourse, the teachers' priorities are with meaning negotiation and not with correction of form. A first observation is the ambiguous function of the teacher's corrective move when it is analysed in context. Teachers' corrections of form are embedded in moves that simultaneously perform other interactional work associated with meaning. On the one hand they are located in sequential positions where a third position teacher receipt is the relevant next move (4). Elsewhere, third position evaluation is delayed in order to check the child's meaning, and the repair of form is embedded in the checking turn (8). In other examples form repairs are embedded in turns that provide agreement and are followed by a topic continuing move, either swiftly such that the child has no opportunity to self-repair (6) or orienting to an absence of self-repair on the child's part (9). Indeed, in all repairs of form, the participants are focused primarily on exchanging meaning and not on the job of correcting grammar. A further issue concerns the ambiguity of the turn in which the child's trouble source is located. In extract 7 there are two sources of difficulty, with form and meaning simultaneously. The dual work of the teacher's corrective move is necessitated by the multiple nature of the child's errors which is not unexpected, given the complexity of a specific language difficulty.

Another problem for the exposure of the correction is the design of teacher's corrective move. First, there is consistent avoidance of outright rejection formats in the next turn following a source of trouble. The teachers do not preface their turns with 'no' and, furthermore, there are many examples of positive receipt tokens such as *yeah* and *that's right*, as seen in both grammatical and phonological repair. These markers perform a typical classroom evaluative function, to signal the teacher's acceptance of the content of the child's contribution. There is a potential tension between the message that grammatical and lexical errors are acceptable whilst simultaneously receiving a covert message that they are unacceptable through mitigated designs of repair.

In terms of the clinical and educational implications, we now examine the design features that are potentially suited to exposing the contrast between the child's version and the adult model. In the lexical error sequences (11 and 12), exposure of the trouble source is achieved in various ways. In (11), the teacher offers a single lexis that serves to isolate the trouble source (*Tate Modern*). It is therefore similar to the exposed corrections used by the parents of young children shown earlier in extract 3. In (12), the placement of the correction is in sentence final position. The advantage of such a placement is that they are naturally lengthened and may receive greater stress, as recommended to speech and language therapists/pathologists for the purpose of grammatical interventions (Fey and Proctor-Williams, 2000).

Another candidate to expose the trouble source is emphatic or contrastive stress. Several studies show that emphatic stress enhances word learning because prosody

helps to channel resources so that they are focused on the target model of lexis or grammar (Weismer and Hesketh, 1993, 1998; Weismer, 2000). In (11), the teacher's word final placement of *ski* is accompanied by a marked pitch rise. The change in pitch has the potential to expose the correction in spite of the teacher's positive receipt. Yet, use of stress by the teachers in the naturalistic classroom data of the current study is rare. On the basis of our qualitative analysis, we would propose that any design features that increase the possibility of locating the contrast would be advantageous.

Not all of the adults' next turns are 'corrective'; some are doing the job of upgrading the child's grammar or lexis by responding contingently to the child's actual level of production. We might term such phenomena CONTINGENT UPGRADES (grammatical or semantic) as opposed to a 'corrections' since they target the child's potential level of linguistic development.

Finally, the quantitative data must be treated carefully, for two main reasons. Every sequence of repair is essentially unique when both lexical and prosodic information is analysed. Secondly, there could be context effects of the type of activity (e.g. one-to-one or small group). Individual discourse style of the teachers may influence interactional behaviour (e.g. a preference for OISR or OIOR). Furthermore, there may be limitations in the extent to which the results may be generalised. The teachers were specialists in the field of language intervention and therefore may have explicit awareness of the types of feedback that are useful for the learner. The extent to which these strategies would generalise to other adults in the classroom needs to be treated with caution.

Concluding comments

This study makes a distinctive contribution to understanding the processes of conversation-based approaches to language learning. Meticulous attention to the linguistic designs of the participants' turns and their sequential implications provides insights into the morphosyntactic, semantic and prosodic features that are associated with the child's noticing and uptake of adult feedback. Our final message for practitioners is to consider the following. As form OIORs are never exposed by performing only the job of correction, nor are they isolated as single words, this creates a tension between teachers' priorities to develop grammar and the actual message given to the child, online, during discourse. If the goals of language lessons are to maintain a focus on meaning and fluency, then correction has a minor place and operates in conflict with meaning making. If, by contrast, the objectives are to develop more mature grammatical forms, then increased exposure of the target form is needed. It remains to be seen whether such an explicit focus on form is acceptable and usable to children and practitioners. Indeed, further qualitative research is needed if teachers and therapists are to be guided effectively in language intervention techniques. Some work has already begun to provide insights into OISRs and the sequential relationship between the various practices (Radford, 2010a). Other work has clarified how children use non-verbal practices, such as eye gaze and gesture, during repairs (Radford and Mahon, 2010c). This detailed approach could be extended to understanding how adults use such resources during oral teaching episodes.

Biographical details

Dr Julie Radford is a Senior Lecturer in special and inclusive education at the Institute of Education, University of London. Her current research includes: how classroom discourse supports children's learning; how teaching assistants use oral strategies; how children with language difficulties communicate effectively in classrooms.
http://www.ioe.ac.uk/staff/PHDT/PHDT_62.html

Dr Judy Ireson is Professor Emerita at the Institute of Education, University of London. Her research interests include dyadic interactions between adults and children in a variety of learning contexts both in and out of school.

Dr Merle Mahon is a Senior Lecturer in the Division of Psychology and Language Sciences at UCL. Her current research includes: multi-modal interaction (speech, gaze & gesture) in deaf children's interactions; intervention for preschool deaf children; outcomes for deaf teenagers.
http://www.langsci.ucl.ac.uk/home/merle/home.php

References

Couper-Khulen, E. (1996) The prosody of repetition: On quoting and mimicry. In E. Couper-Khulen and M. Selting (eds) *Prosody in conversation* (pp.366-405). Cambridge UK: Cambridge University Press.

DCSF (2008) The Bercow Report: *A review of services for children and young people (0-19) with speech, language and communication needs.* Nottingham: DCSF publications.

Fey, M. and Proctor-Williams, K. (2000) Recasting, elicited imitation and modelling in grammar intervention for children with specific language impairments. In D. V. M. Bishop & L. Leonard (eds) *Speech and Language Impairments in Children: Causes, Characteristics, Intervention and Outcome*. Hove: Psychology Press.

Have, P. ten (1999) *Doing conversation analysis: A practical guide*. London: Sage.

Jefferson, G. (1987) On exposed and embedded correction in conversation. In G. Button and J. Lee (eds) *Talk and Social Organization*. Clevedon: Multilingual Matters.

Local, J. (1992) Continuing and restarting. In P. Auer and A. di Luzio (eds) The Contextualisation of Language (pp.272--96). Amsterdam: Benjamins.

McCartney, E., Boyle, J., Ellis, S., Bannatyne, S. and Turnbull, M. (2011) Indirect therapy for children with persistent language impairment in mainstream schools: outcomes from a cohort intervention. *International Journal of Language and Communication Disorders* 46: 74--82.

McHoul, A. (1990) The organization of repair in classroom talk. *Language in Society* 19: 349--377.

Montgomery, J. (2008) Role of auditory attention in the real-time processing of simple grammar by children with specific language impairment: a preliminary investigation. *International Journal of Language and Communication Disorders* 43: 499--527.

Pomerantz, A. (1984) Agreeing and disagreeing with assessments: some features preferred/dispreferred turn shapes. In M. Atkinson and J. Heritage (eds) *Structures of social action: Studies in conversation analysis.* (pp.57--101). Cambridge UK: Cambridge University Press.

Radford, J., Ireson, J. and Mahon, M. (2006). Triadic dialogue in oral communication tasks: What are the implications for language learning? *Language and Education* 20: 191-210.

Radford, J. (2010a). Practices of other-initiated repair and correction in SSLD classroom discourse. *Applied Linguistics* 31: 25-44.

Radford, J. (2010b). Adult participation in children's word searches: on the use of prompting, hinting and candidate offers. *Clinical Linguistics and Phonetics* 24*:* 83-100.

Radford, J. & Mahon, M. (2010c). Multimodal participation in storybook sharing. In H. Gardner & M. Forrester (eds.) *Analysing interactions in childhood: methods and applications.* John Wiley & Sons Ltd. pp208-226.

Radford, J., Blatchford, P. and Webster, R. (2011). Opening up and closing down: how teachers and TAs manage turn-taking, topic and repair in mathematics lessons. *Learning and Instruction* 21: 625-635.

Ridley, J., Radford, J., & Mahon, M. (2002). How do teachers manage topic and repair? *Child Language Teaching and Therapy* 18: 43-58.

Saxton, M. (2005) 'Recast' in a new light: insights for practice from typical language studies. *Child Language Teaching and Therapy* 21: 23--38.

Schegloff, E. A. (1996) Confirming allusions: towards an empirical account of action. *American Journal of Sociology* 104: 161--216.

Schegloff, E. A. (2007) *Sequence Organisation in Interaction: A Primer in Conversation Analysis.* Cambridge: Cambridge University Press.

Schegloff, E. A., Jefferson, G. and Sacks, H. (1977) The preference for self-correction in the organization of repair in conversation. *Language* 53: 361--82.

Seedhouse, P. (2004) *The Interactional Architecture of the Language Classroom: A Conversation Analysis Perspective*. Oxford: Blackwell.

Selting, M. (1996) Prosody as an activity type distinctive cue in conversation: the case of so-called "astonished" questions in repair initiation. In E. Couper-Khulen and M. Selting (eds) *Prosody in conversation* (pp.231--270). Cambridge UK: Cambridge University Press.

Shield, B. M. and Dockrell, J. E. (2004) External and internal noise surveys of London primary schools. *Journal of the Acoustic Society of America* 115: 730--738.

Stivers, T. (2005) Modified repeats: one method for asserting primary rights from second position. *Research on Language and Social Interaction*, 38: 131-158.

Tannen, D. (1989) *Talking voices: repetition, dialogue and imagery in conversational* discourse (Vol 6). Cambridge, UK: Cambridge University Press.

Tarplee, C. (1996) Working on young children's uterances: prosodic aspects of repetition during picture labelling. In E. Couper-Khulen and M. Selting (eds) *Prosody in conversation* (pp.406--427). Cambridge UK: Cambridge University Press.

Wang, C. (2005) *The pragmatics of corrections in the process of first language acquisition: a relevance-theoretic approach.* Unpublished doctoral dissertation, University of Loughborough, England.

Weismer, S. E. (2000) Intervention for children with developmental language delay. In D. V. M. Bishop and L. Leonard (eds) *Speech and Language Impairments in Children: Causes, Characteristics, Intervention and Outcome*. Hove: Psychology Press.

Weismer, S. E. and Hesketh, L. J. (1993) The influence of prosodic and gestural cues on novel word acquisition by children with specific language impairment. *Journal of Speech and Hearing Research* 36: 1013--1025.

Weismer, S. and Hesketh, L. J. (1998) The impact of emphatic stress on novel word learning by children with specific language impairment. *Journal of Speech, Language and Hearing Research* 41: 1444--1458.

Appendix 1: Transcription conventions

System originally developed by Gail Jefferson and presented in 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.
,	A comma indicates continuing /level intonation.
↑ ↓	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