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**Interactions between a deaf child for whom English is an additional language
and his specialist teacher in the first year at school: combining words and
gestures.**

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Interactions between a deaf child for whom English is an additional language and his specialist teacher in the first year at school.: gestures and teacher's supporting turns.

Abstract

This paper provides a description of the interactions between a nursery-aged prelingually deaf¹ child and his specialist teacher recorded at four consecutive time points during the first year at school. The child comes from a hearing, Somali-speaking family where English is an additional language (EAL). Using Conversation Analysis procedures, findings show how, with the teacher's support, the deaf child accomplishes 'multi-element' turns (that is, turns in which semantic referents are combined using words and gestures - 'elements') within and across time points. Gestures remain an essential feature of the child's communication at all times. The teacher's prior and next turns create and support language learning opportunities for the child and this support is continually adjusted in response to the child's turns. It is suggested that these sequences of talk are an important mechanism driving the child's learning of spoken English.

Key words:

Deaf child:teacher interaction; spoken language; gesture; language learning opportunities.

¹ The words 'deaf' and 'deafness' are used in this paper to indicate permanent, prelingual sensori-neural hearing impairments of sufficient severity for the deaf child to require special educational provision. This use of the term 'deaf' is not to be confused with the term 'Deaf' which is currently used in the UK when referring to the Deaf community and culture whose communication modality is sign, and for whom British Sign Language (BSL) is their first and home language..

Introduction

When parents of prelingually deaf children opt for them to be educated in what can loosely be called the 'natural oral method' of education, the anticipation is that spoken language will become their main communication modality. In this method, supporting the young deaf child to achieve spoken language skills, using digital hearing aids and/or cochlear implants to maximise use of their residual hearing, is one of the teacher's main objectives, especially in the Early Years Foundation Stage². Yet there is relatively little research into how this objective is accomplished in the classroom setting. The analysis reported here will provide a description of classroom interaction which will give insight into actual practices used by teachers. Prelingually deaf children's difficulties in spoken language (Blamey 2003; Marschark and Spencer 2006) continue to be reported in spite of significant improvements in the early identification of hearing loss (Fortnum, Summerfield, Marshall, Davis and Bamford 2001; Newborn Hearing Screening Programme 2005; Kennedy, McCann, Campbell, Law, Mullee, Petrou, Watkin, Worsfold, Yuen, and Stevenson 2006) and in the recent technical innovations in digital hearing aids and the expansion in cochlear implantation programmes (Newton 2003; Marschark and Spencer 2006; Thoutenhoofd, Archibold, Gregory, Lutman, Nikolopoulos, and Sach 2005). In the literature, deaf children's abilities and deficits tend to be characterised in terms of successive performance on expressive and receptive speech and language assessments or tests (Webster 1986; Marschark 2000; 2001; Matasaka 2006) but when their actual communicative behaviour in interaction is examined, they are clearly adept in using all their verbal and non-verbal communicative resources to convey meaning although their skill in combining these resources is seldom put to the test.

Most studies investigating the interactions between deaf children and their teachers have focussed on the deaf children's spoken language development (and seldom include non-verbal communication) using analytical methods in which each

² The Early Years Foundation Stage (Nursery and Reception years) of the National Curriculum addresses the needs of children aged 3-5 years. See http://www.standards.dfes.gov.uk/primary/foundation_stage/

participant's verbal turn is coded (using linguistic definitions such as 'question' 'statement' etc.) and/or measured (in terms of mean length of utterance and mean length of turn), thus quantifying teacher's input to the child and the child's subsequent output. The main findings from this substantial body of work indicate that teachers' conversational style is characterized by controlling 'moves' such as asking predominantly closed or forced choice questions and insisting on repetitions, thus influencing the length of utterance produced by the deaf child in response (Wood, Wood, Griffiths and Howarth 1982; Wood, Wood, Griffiths and Howarth 1986; Musselman and Hambleton 1990; Beattie and Kysela 1992; Jeanes, Nienhuys and Rickards 2000). These findings give valuable insight into teachers' input, and deaf children's output in various interactive contexts, but they do not directly scrutinize the process of language learning and teaching in interaction. The 'uptake' of teacher's input by the child, as evidenced by the next and subsequent turns and taking into account all verbal and non-verbal communicative behaviours in real-time conversation is not examined in detail. To enable the necessary level of detail to be achieved in describing and accounting for such uptake within the sequential organization of talk, the analytic framework of Conversation Analysis (CA) (Schegloff 2007; Richards and Seedhouse 2005; Heritage 1995; Schegloff 1992; Sacks, Schegloff and Jefferson 1972) is ideal. However, using a CA framework in order to demonstrate change over time is a substantial challenge, yet it is necessary to examine data at successive time points when addressing questions of language development. Corrin, Tarplee and Wells (2001) did this in their analysis of interactional phenomena considered to be indicative of typically developing children's emerging grammar. They demonstrated how 18-24 month-old children change the form of their turns from one to two word utterances during interactions with their mothers in so-called "successive utterance sequences" (Corrin Tarplee and Wells 2001: 202). They showed that these sequences are a collaborative undertaking where both mother and child carefully build on each other's prior verbal and prosodic cues, culminating in the child's production of a two word utterance, displaying how, with the adult's support, the child comes to combine semantic referents by combining words within a single turn.

In a similar way, the sequences that are of particular interest in the analysis to follow are those in which the deaf child's turn displays that he has joined semantic referents together in a novel single turn at talk. In this data, however, in addition to spoken elements (such as words and vocalizations), particular attention is paid also to gestural elements (representational gestures and points) used by the child and by the teacher. Gesture is an integral part of deaf children's communication (Nicholas and Geers 1997; Lederberg and Everhart 1998; Iverson, Capirci, Longobardi and Caselli 1999; Goldin-Meadow 2005; Klatter-Folmer, van Hout, Kolen and Verhoeven 2006). As Volterra, Caselli, Capirci, and Pizzuto (2004:22) have suggested "vocal and gestural modalities are used together".as children become more competent speakers, so that gestures are not simply replaced by words.

For typically developing children studies have shown that combining meaningful gestures with words is an important and possibly a fundamental developmental step in language learning (Morford and Goldin-Meadow 1992; Nicoladis, Mayberry and Genesee 1999; Ozkaliskan and Goldin-Meadow 2005; Iverson and Goldin-Meadow 2005), with the link between gesture and speech suggested as a transitional way in which the very young are able to express complex ideas before they can do so verbally (Bates, Benigni, Bretherton, Camaioni and Volterra 1979; Goldin-Meadow & Morford 1990; Iverson, Capirci and Caselli 1994; Volterra & Erting 1994; Iverson, Longobardi and Caselli 2003; Volterra et al 2004). In this analysis,

Thus the focus of the analysis to follow is on sequences in which the child combines more than one element (spoken and/or gestural) within a single turn, that is, he constructs a multi-element turn – combining words with gestures, or words with other words. As in the Corrin et al (2001) research, these turns are taken to be indicative of the child's emerging grammar. Of particular interest are the teacher's turns prior to and following the multi-element turn.

Working with parents and young children, Tarplee (1993; 1996) examined the adult's prior and following turns in a sequence of interaction with young children to show how by supporting the children's turns at talk, they encouraged language development. Using a CA framework, Tarplee distinguished the shape of the receipt, or third, turn, in three-part picture-labeling sequences, showing how different shapes

of this third turn have different consequences for the subsequent talk (Tarplee 1996). For example, a receipt turn which is shaped as an exact repetition of the child's labeling utterance (both in its phonetic realisation and in its prosody where the parent's pitch contour mimics that used by the child), affirms the child's choice of label and ends the labeling sequence. The parent can also provide the child with language learning opportunities by shaping the third turn in a sequence in such a way as to prompt further turns from the child, for example by asking a relevant question. Language learning-teaching can be considered as a mutual accomplishment where parents (and other mature speakers of the family's first language) adapt their style of talking to the child, for example, by modifying the structure of their language input to suit the perceived ability of the child to understand and to respond (Vygotsky 1978, Bruner 1983, Forrester 1992; Gallaway and Woll 1994; Snow 1995; Wootton 1997; Tomasello 2003). In this paradigm, it is assumed that the child will be learning the same language as that spoken by the family. For EAL deaf children from hearing families, living in the UK³, language input is a more complex issue. At home they will be exposed mainly to the family's first spoken language, and probably other languages, including at least some English and possibly also some sign language. To complicate matters further, in the UK, deaf children receive speech and language intervention soon after diagnosis and this is usually delivered in spoken English⁴. If the parents then choose an 'oral' education, their child will be taught in spoken English at school. It is difficult to predict the EAL deaf child's uptake of this language input, and equally difficult then to know what their first language might be. Given that their language development is delayed, but that at three years of age, they have socio-cognitive-linguistic experience well in advance of their eighteen month-old typically-developing language-learning counterparts, it is a

³ Fortnum et al (2001) indicated that the prevalence of confirmed permanent childhood hearing impairment in the UK (>40dBHL in the better ear) is 1.65 per 1000 live births, rising to 2.05 per 1000 among children aged nine years and older. Estimates indicate that a large number (approx 20% in London) of these come from minority ethnic families (Naeem and Newton 1996; Mytton and Mackenzie 2005), most of whom do not have English as their first language. In 90% of these latter cases, the families are hearing, and have little or no experience of deafness (NDCS 2005). According to the latest available BATOD Survey data (BATOD 2003; 2006 personal communication), 13% of deaf children in England were recorded as coming from an ethnic group other than White. 9% had a language other than English at home, and there were 60 different home language recorded.

⁴ Post diagnosis intervention begins with home visits by the local peripatetic teacher of the deaf and/or a specialist speech and language therapist as part of the preschool service provision and continues when the child starts attending nursery and then enters school.

moot point as to whether these deaf children are still in the process of first language acquisition when they start nursery school, or if they are learning English as their additional language. Whilst the importance of language learning in the home cannot be overstated, once deaf children start school, they will be exposed consistently to spoken English, and language learning becomes the teachers' prime responsibility. In the oral education context, this will be the learning of spoken English. Hence, within the specialist nursery classroom, interaction between the EAL deaf child and the teacher becomes a salient context for the child's language learning and the child-teacher dyad effectively becomes the main language learning environment. As Lloyd, Lieven and Arnold (2001) have noted, with the inclusion agenda continuing to drive educational decisions for deaf children, better understanding of the oral environment in the classroom is an important research objective.

The analysis presented below set out to examine classroom interactions between a young EAL deaf child and his teacher in activities expressly designed by the teacher to provide language learning opportunities in order to develop the child's spoken English. Two main questions are addressed in the analysis:

- (1) In sequences of interaction during which the child constructs a novel multi-element turn, how do the teacher's prior and next turns in the sequence support the achievement of that turn?
- (2) In what ways does the support differ at successive time points?

Participants

The deaf child (MA) has a moderate to severe⁵ hearing loss of congenital onset with a genetic etiology, signifying the likelihood of delayed of speech and language development relative to hearing peers (Geers 2006; Carney and Moeller 1998). His hearing loss was diagnosed at age 1 month and hearing aids were fitted immediately after diagnosis. However, before starting school at age three years two months, his hearing aid use at home was reportedly very poor and inconsistent. At school he uses bilateral Phonak Aero 311A2 digital hearing aids. He comes from a Somali-speaking family and has an older deaf sister who attends the same school. Their mother, who speaks some English, attended a few British Sign Language (BSL) classes when her daughter was first diagnosed, but sign language is not used at home. Anecdotally, MA and his sister communicate using a mixture of spoken English, Somali, BSL signs and gestures. When at home, MA spends most of his time in the care of his grandmother within the extended family where Somali is spoken.

When assessed at the start of the study, MA was recorded as being at a one-word level for comprehension of both English and Somali on the Derbyshire Language Scheme Rapid Screening Test (Knowles and Masidlover 1982). His speech and language therapy records show that his expressive language was also at a one-word level for English. No assessment of his non-verbal communication was available. The teacher (T) has normal hearing, is trained as a specialist teacher of the deaf and has worked in primary school classes for 15 years. Her communication modality is spoken English, but she uses gestures and other non-verbal resources to support her spoken communication with the children.

The school is a mainstream community primary school within which there is a Unit for Deaf Children. In the Unit, each year group has its own classroom and specialist teacher for the deaf. The deaf children are mainly taught within the Unit, but are

⁵ Audiological results at age 3;5 show that unaided pure tone average (over .0 5, 1, 2 and 4kHz) was 59dBHL in his left ear, and 70dBHL in his right ear. This degree of hearing loss is typical of the largest group of deaf children in the UK (BATOD 2003). His aided hearing level is given as 23dBA, indicating that he is technically likely to receive considerable benefit from amplification.

included with hearing children for various lessons and activities within the mainstream classrooms.

The complexities facing the researcher of deaf children's spoken language development are well-documented (Marschark & Spencer 2006) and are acknowledged here (notably that the population is heterogeneous, with each deaf child's individual audiological profile and background different from the next). When examining interactions with deaf children, further variables are to be considered, such as the audibility and visibility of the interlocutor's speech (Lederberg, 2003) and the interlocutor's attentional strategies (Beattie and Kysela, 1992; Harris, 2000) to name but a few. In this research, some of this complexity is taken into account within the constrained dynamic of the classroom dyad which allows for systematic recording of interactions. Here at least in principle, the audibility, visibility and the attentional framework of spoken interaction 'input' were optimised for language learning.

Data

MA and T were recorded once at four time points (in each of four school terms) during typical daily individual 'language enrichment' sessions, held in the Unit nursery classroom. The sessions are based around the activity of looking at pictures and/or sharing a storybook (Crowe, Norris and Hoffmann 2004; Liboiron and Soto 2006). The choice of this activity is a strategy employed by the teachers to create an environment for language learning where they can be reasonably confident that the child has an understanding of the topic and its vocabulary. In this way, talk can be encouraged, and opportunities for language learning provided. At the first time point when MA is aged three years five months, photographs of the children and staff in the nursery class are used; at subsequent time points, the teacher moves on to using familiar storybooks. It is the practice of the Unit to regularly video such sessions for record-keeping purposes so the recordings were made at the convenience of the teacher. Since the children and teachers were accustomed to being filmed, and the context for the filming was not set by the researcher, the data has high ecological

validity⁶ and relatively low ‘camera effects’ (Labov 1972). The data were transcribed by an experienced speech scientist using CA conventions (see Appendix 1). The transcriptions were then verified by a speech and language therapist specialized in working with deaf people.

All sequences in which MA constructed a novel multi-element turn were identified, yielding a corpus of 102 sequences. The data set is illustrated in Table 1. In this Table, in order to contextualize the novel multi-element turns, instances of single element turns, as well as multi-element turns which are repetitions of the teacher’s prior turn are also enumerated.

Insert Table 1 here

Analysis and Findings

Across all time points, the analysis shows that in sequences in which the child displays a multi-element turn, the teacher’s prior and next turns facilitate and support that multi-element turn. For the sake of clarity in the discussion below, positions of key turns in the sequences will be referred to from time to time as follows: the teacher’s turn prior to the child’s multi-element turn will be called Turn A. The child’s multi-element turn, will be called Turn B and the teacher’s following turn will be called Turn C.

The teacher’s design of Turn A is vital to the response that follows in Turn B and to the range of possibilities open to her in the Turn C position. She uses this turn to initiate an activity or a topic, to ask questions, to redirect the child’s attention, to pursue a topic and so on, designing this turn with words, deictic gestures (points) and sometimes with representational gestures. In response, the child’s multi-element turn, in the Turn B position, is designed with representational gestures, versions of words and some intelligible words. In the Turn C position, the teacher always gives a verbal summary effectively providing a “version of what he means to say” (Heeschen & Schegloff, 1999:401). She is interpreting the content of Turn B, and at the same

⁶ Ecological validity here means the degree to which the behaviors observed and recorded reflect the behaviors that actually occur in natural settings.

time, also modelling its correct verbal form. She never uses gestures in Turn C, neither does she use this turn position to initiate repair or to overtly correct the child's verbal delivery.

The analysis shows that while the teacher's support is similarly robust in all time periods, but it also demonstrates that there is a progression of support given by the teacher within each session. This starts with overt support (such as direct prompts), which is withdrawn as the session proceeds, in response to the child's turns. The kind of support given by the teacher early on in the session may be necessary for the child to develop a sense of the shape of the activity, but once that shape has been grasped, then his own productions become more spontaneous. This indicates the significance of the initial support offered by the teacher early in the session, and the child's grasp of the nature of the activity. It is also a demonstration of how the teacher's turns "build contingently on the child's contribution" (Radford, Ireson and Mahon 2006, p.193) thus providing essential language learning opportunities and how consequently, new features to be learnt are more likely to be noticed in the teacher's input. These subtle language teaching strategies are unlikely to simply be an artifact of the child moving on in his language skills since, as will be shown, there is evidence of him giving an enhanced response in Turn B as a direct consequence of the teacher's prior turn. That MA's language skills progress over time is clearly displayed in the way his multi-element turns become more complex at each time point.

The first illustrations, Examples 1 (a), 1(b) and 1(c), are from Time Point 1 when MA is 3;5 years old. In these examples, it is clear that as the session progresses and MA becomes familiar with the activity, the trajectory of the sequences alters with respect to the way T supports MA's turns. The activity is based around a set of photographs of each child in the nursery class. MA has been in the class for three months, and he knows the names of his classmates.

Time Point 1: Example 1(a)

	007	T	[Should we have a look] [((slides pictures closer))] at the pictures first
	008	MA	[Nabib] [((points to picture of Nabib))]
	009	T	yeah that's Nabib
	010		[he's not here today is he?] [((takes Nabib picture out of transparent folder))]
	011	MA	nah tee tay
	012	T	he's not here today ((flips picture onto table))
	013		(1.0) ((T and MA look down at picture))
Turn A	014	T	he's [not very] well
	015	MA	[°Nabi °]
Turn B	016	MA	[Nabib] [((turns around, gestures 'there' towards exit door))] (turns back and looks at T)
Turn C	017	T	yeah [he's not here today] [((shakes head))]
	018		(0.8)

At the start of the activity T and MA have established the name of the child in the first picture (Nabib). In her acknowledgement (line 009) of MA's correct naming of Nabib, T adds her comment that Nabib is away from school on that day (line 010), designing this as a tag question, and indicating that more than just a single element turn (the name of the child on the photograph) is required. In response, MA gives his version of T's comment saying "nah tee tay" (line 011). T repeats her comment "he's not here today" (line 012) which serves to confirm that MA was required to provide an answer and that his attempted repetition is acceptable even though it is not correctly pronounced. Her turn (line 011) here also closes the sequence and models the

correct form of the answer. At the transition relevance place (Sacks et al 1974) that follows (line 013), MA does not take the turn and T then pursues the topic, offering a further comment (line 014), giving a reason for Nabib's absence: 'he's not very well'. In overlap MA repeats 'Nabib' (line 015), and then immediately says the name again while simultaneously giving a gesture indicating Nabib's location (away from school through the exit door, see Figure 1a), giving the multi-element turn (line 016). This gesture is used here in what Iverson and Goldin-Meadow (2005) call a 'supplementary' manner, that is, the gesture adds semantic information to the verbal message being conveyed. Arguably, MA's combining the gesture and the word in this turn was supported by the preceding sequence in which T's turns (at lines 010, 012 and 014) effectively prompted him to give more than a one element response. Evidence for this is in the teacher's following turn where, concluding the sequence (line 017), she then overtly acknowledges MA's multi-element turn with her 'yeah' followed with a repeat of "he's not here today", confirming that she interpreted MA's multi-element turn to mean Nabib is away from school.

Insert Figure 1a about here

As the activity proceeds, photographs of the other classmates are presented. In Example 1 (b), T asks an open question (line 115), whilst pointing to the picture of the child (Gaberon). This time, MA immediately responds with a multi-element turn which is a version of the name (line 116) and a simultaneous supplementary gesture 'there' this time directed to the nursery door (see Figure 1b).

Insert Figure 1b about here

This shows that he has understood that in this activity, he is required to give both the name and the current location of the classmate. T's receipt (line 117) gives a verbal version of MA's turn (as in Example 1(a)) confirming that Gaberon is at school on that day and she is in the mainstream nursery classroom, and providing a correct verbal model.

Time Point 1 Example 1(b)

			((T and MA look down at picture of Gaberon))
Turn A	115	T	[and that's G- (0.7) who's that] [((points to picture of Gaberon))] holds point until line 120
Turn B	116	MA	[ha ma reh]= [((gestures 'there' towards nursery door))]
Turn C	117	T	=Gaberon's in the nursery ((flips to next picture))

Towards the end of the activity, there is no overt support from T for MA's multi-element turn. In Example 1(c) this turn is preceded by a silence (line 120) during which both T and MA look at the photograph. Because of the foregoing sequences, in which T's actual turns prompted MA's multi-element turn, this silence then becomes relevant as a prompt for him to take the next turn and to design it with two elements (line 121). T sums up verbally as before (line 123).

Time Point 1 Example 1(c)

			((flips to next picture))
Turn A	120		(2.6) ((MA and T look down at the picture))
Turn B	121	MA	[ohm ohm] [((gestures 'there' towards to nursery door))]
Turn C	123	T	[Ossies's in the nursery] [((nods head))]
	124		((flips to next picture)) ((shows next picture to MA))

Going on to Time Point 2 when MA is 3;10 years old, similar patterns of sequences are found, with T's prior turns supporting MA's multi-element turn. Now, however, MA constructs his multi-element turns with two or more words, sometimes accompanied by a point at the relevant picture. T follows in her next turn by providing a verbal

summary giving her version of the content of Turn B and modelling the correct form. Example 2 illustrates this. The activity is sharing a picture book of Goldilocks and the Three Bears.

Time Point 2 Example 2(a)

	245		((MA flips page with T's help))
	246	T	[°'bout° that one] [((points to picture of Goldilocks who has finished eating Baby Bear's porridge – the plate is empty))]
			(1.5) Both look down at new page
	247	MA	[°doldie lo- doldie lo-°] [((points at picture))]
Turn A	248	T	yeah [look at that bowl] [((points to picture))]
Turn B	249	MA	((looks down)) doldie loh lah eashing f-
Turn C	250	T	[she likes eating that porridge good boy] Goldilocks likes eating that porridge [((nods head, and points emphatically))]

At the start this activity, T invites MA to talk about the picture (line 246), and after a pause, MA's offers a single element turn (line 247) (his version of Goldilocks, repeated). T acknowledges this (line 248) saying "yeah" and she then directs his attention to another aspect of the picture, saying 'look at that bowl'. Her turn construction here reflects a useful language teaching strategy: "yeah look at that bowl" where she is alluding to not only the subject of the sentence, Goldilocks (already given), but is also providing other information about the scene (the bowl), thus prompting a potential sentence. That MA has attended to this other information is implicit in the construction of his following verbal multi-element turn (line 249), constructed with (his versions of) words. T again concludes the sequence with a verbal summary (line 250), her interpretation of line 249 – "Goldilocks likes eating

that porridge”. It is interesting to note that whilst re-doing an intelligible and grammatical version of his Turn B, T also signals MA’s ‘ownership’ of his talk, by converting the name ‘Goldilocks’ into a pronoun and thus reflecting that this is the second mention of the character.

A few months later, at Time Point 3, MA is 4;1 years old. In this session, T and MA are coming to the end of the story of the Enormous Turnip and the picture they are attending to shows all the characters lined up behind the father, helping to pull the Enormous Turnip out of the ground. In the discussion of this example, it will be shown that the teacher’s prior turns not only support MA in putting elements together in his turns, but she also provides opportunities for him to gradually increase the complexity of his turns so that he ends up constructing a complex sentence.

The first few lines (309-313) set the scene for their talk:

Time Point 3: Example 3

		Both look down at page spread
	309 T	[the, [((points to picture of Mummy holding the turnip))]
	310	(2.4) ((both gaze at picture))
	311 MA	((points to the same picture) hur-bin
→	312 T	[turnip Mummy’s pulling the turnip] [((nods head))]
	313	(2.1) ((T and MA look down at the picture))

T starts the sequence (line 309) with a prompting turn that is a ‘designedly incomplete utterance’ (Koshik 2002), that is, she starts with “the” delivered with continuing intonation (held at mid-pitch) and points to the picture of the mother, expecting MA to fill in the missing word, “mummy”. MA, whilst looking down at the same picture, provides instead a version of the word “turnip” in line 311 (the turnip is also pictured). That this is an appropriate response (after all, in line 309, T has

prompted him for a noun) is evidenced by T’s acknowledgment in line 312 which she gives in the form of a correction of his pronunciation of the word ‘turnip’. She immediately then provides the desired answer in full, “mummy’s pulling the turnip”. This is followed by a 2.1 second silence (line 313) during which they both look down at the picture. At this TRP, MA does not take the next turn. T continues the activity (line 314), pointing to the next character (the girl). A brief insertion sequence (lines 315-317) follows, where T corrects MA’s naming of the next character.

Time Point 3: Example 3 continued

	314	T	((T points to next character - the girl - pulling the turnip))
	315	MA	boy
	316	T	girl
	317	MA	girl
Turn A	318	T	((gestures pulling))
Turn B	319	MA	[hur (1.0) [hurnip [((gestures pulling))] [(points towards page)]]
Turn C	320	T	[pulling the turnip [((nods head))]]((points to picture of boy))

Having thus established that the next character to be talked about is the girl, T now does something different in her next turn. She designs this turn with the gesture for “pulling”, and no accompanying word (see Figure 2). MA’s response (line 319) is a multi-element turn, designed as a simultaneous delivery of a version of the word ‘turnip’ (said previously in line 311) and the supplementary gesture “pulling”. After a brief pause he repeats the word and points down at the page. Arguably, he has put these elements together from the prior sequence of turns – he uses the word “turnip” and he imitates T’s gesture “pulling”. T acknowledges that his combination of elements in this turn is acceptable, giving her verbal summary “pulling the turnip” and

nodding. She does not add the character's name to her verbal summary. She then points to the next character – the boy (line 320).

Insert Figure 2 about here

As the talk continues, MA correctly names the character T is pointing to – the boy - and he also points to the boy (line 321).

Time Point 3 Example 3 (continued)

321	MA	(0.8) [boy ((glances up at T))] [((points to picture of boy))]
322		(1.2) ((MA and T look at each other))
323	MA	[(□two syllables) hurnip] [((gestures pulling))]
324	T	[pulling the turnip] [((nods head))] ((T points to picture of dog))
325	MA	(0.8) [(two syllables) (.) pull hurnip] [((touches hearing aid)) ((gestures pulling))]
326	T	[pu(h)lling th(h)e tur(h)nip] [((nods head, smiles))]
327	T	(0.9) ((T points to picture of cat))
328	MA	[kah] (0.9) [pulling hurnip] [((points at cat picture))] [((gestures pulling))]
329	T	[is pulling the turnip]

That MA's turn (line 321) is not a sufficient answer is indicated by the silence (line 322) during which MA and T look up at each other. MA then gives a multi-element turn designed with his version of the word 'turnip' and the supplementary gesture 'pulling' (line 323). The two syllables that precede the word in this turn are not

intelligible – they could be an attempt at saying ‘boy’ or ‘pulling’. T’s receipt (line 324) acknowledges MA’s turn: she nods, saying “pulling the turnip”. She does not use this turn to ask for clarification of the unintelligible syllables, and by designing her turn as she does, she is not offering a candidate understanding of those syllables. She is indicating that MA’s two element turn in which he combines ‘turnip’ and ‘pull’ is sufficient at this stage. She also does not add in the word for the “boy” character in her verbal summary.

She then continues the activity (line 324) by pointing to the next character, the dog. MA now needs no further prompting to produce his multi-element turn (line 325), this time designing it with three verbal elements - two unintelligible syllables (possibly representing the word ‘dog’), the word ‘turnip’ and the gesture “pulling” which is now delivered simultaneously with the word “pull”. Thus he is using this gesture differently from his previous turns - the gesture is complementary to the co-occurring word, that is, their meaning is the same (Iverson and Goldin-Meadow 2005). In her following turn (line 326) T gives MA lots of encouragement with discernable laughter within her words, nodding her head and smiling, saying “pu(h)lling th(h)e tur(h)nip”, nodding her head (Turn C) and laughing. After a brief pause she points to the next character, the cat (line 327). In response, MA gives (line 328) a multi-element turn designed with three verbal elements, the first being ‘cat’ followed by a pause then ‘pulling turnip’ with a simultaneous complementary gesture “pulling”. T follows with a turn (line 329) that has an additional element, the word ‘is’ – she says “is pulling the turnip”, possibly reflecting the added word in MA’s previous turn (“kah”), but also giving a more grammatically ‘correct’ model of the sentence.

The talk reaches a conclusion in the final sequence where they come to the end of the story:

Time Point 3: Example 3 (end)

	330	T	(points to picture of mouse) [((nods head))]
Turn B	331	MA	mouse (0.7) [pulling] it turnip [((gestures pulling))]
Turn C	332	T	and the ↑mouse is pulling the turnip
	333	T	[one two three [four five six seven] [((points at book for each count))]
	334	MA	[free five fix fe-veh]

T points to the picture of the mouse (line 330), and MA responds with a turn (line 331) designed with four elements, mouse (word), 'pulling' (word + complementary gesture) and 'it turnip' (two words) (line 331). The role of 'it' in this turn is debatable - MA could be adding it into his turn in response to hearing the 'is' in T's prior turn (line 329). She closes the talk (line 332), summing up in words "and the mouse is pulling the turnip" modeling the correct, full sentence. This is the model sentence she provided originally in line 312 "Mummy's pulling the turnip". That this is a satisfactory conclusion to the talk and indeed to the activity is evidenced by the change in focus where both T and MA count the characters (lines 333-334).

Tracing MA's turns over each sequence shows how MA incorporates T's 'pulling' gesture (line 318), using it to supplement his turns in lines 319 and 323. Later on in the activity, he then adds the word 'pull' to his turns, but continues to accompany it with the now complementary 'pulling' gesture (lines 325, 328 and 331). At the end of the activity, he has accomplished a grammatically complex verbal sentence. The close contingency of T's turn designs has supported MA in this achievement. This is evidenced in her construction of the prior turns in each sequence, where, as in previous time points, she withdraws overt support as the activity proceeds. It is also displayed in the way her final turn in each sequence changes subtly as the session progresses. She sums up with "pulling the turnip" in lines 320, 324 and 326 when

MA's prior multi-element turn contained 2 semantic elements (lines 319, 323 and 325 respectively). When MA's prior contains three semantic elements "kah (0.9) pulling hurnip" (line 328), T's follow-up turn contains more words: "is pulling the turnip". Finally when MA's turn has four elements "mouse pulling it hurnip" (line 331), T follows with the full model sentence: "and the ↑mouse is pulling the turnip". This delicate contingent turn design by T culminates in MA achieving this complex multi-element turn, and satisfactorily ends the activity.

At the fourth time point MA is aged 4;5. In the activity of sharing the story of 'The Three Little Pigs', sequences similar to those described for the earlier time points were found. However, at this time, T's turns in the Turn A position are also frequently constructed as open invitations to talk, "oh look" "what happened" "so what we got". In the immediately following turn MA achieves multi-element turns which he designs with words and complementary gestures, without the delicate support in prior turns from T seen in previous time periods. In the Turn C position, as in previous examples, T provides a verbal summary modeling the correct form. This is illustrated in Example 4. MA and T are at the point in the story where the wolf has huffed and puffed at the first house of straw:

Time Point 4: Example 4

Turn A	264	T	oh look
	265		(1.3) MA and T look down at the book; they continue to look down for the whole sequence
Turn B	266	MA	[oh de::ar (syllable syllable)] [((gestures surprise, puts arms akimbo))]
Turn A	267	T	what happened
Turn B	268	MA	blow it how (.8) it [fell dow] [((gestures falling over))]
Turn C	269	T	he blew the house and it fell down [didn't he]
	270	MA	[bi: gol] in [there] [((points to picture of 1 st little pig running to next house))]
	271	T	[and this little pig [ran] quick quick quick quick quick quick [((gestures running))] ((rising pitch on each 'quick'))
	272	MA	[ahhhh] [((stomps feet))]

T invites MA to talk about the picture (line 264). MA does this in a rather more sophisticated way than has been seen previously – he does not simply describe the picture (which would have been adequate for the storybook sharing routine) but he initiates the topic as news by expressing surprise. His verbal offering is not entirely intelligible, but is accompanied by an expression of surprise in a gesture (raising shoulders with a questioning facial expression). He then puts his arms akimbo. T responds to this turn with a ‘go-ahead’ to tell her “what happened” (line 267). In his next turn, MA offers the explanation (lines 268) in two parts, each designed with three verbal elements. He first says “blow it how”, and after a short pause, “it fell dow”. He delivers his “fell dow” with a complementary gesture for ‘falling down’. T receipts this turn by providing an interpretation of what MA has said (line 269), again modelling the correct forms for all the words, and followed by a tag. MA overlaps this

tag (line 270), with his next verbal multi-element turn (line 271), accompanied by a precise point to the house of sticks. Thereafter, T and MA take the narrative forward in overlap, using reported speech, gestures, pantomime and 'getting into character'. Thus, by the time MA is 4 years 5 months old, he is using multi-element verbal turns (words and complementary gestures) without the prior turn support from his teacher shown in the earlier time points.

Concluding remarks

The detailed description of sequences at successive time points gives insight into how the teacher accomplishes the task of 'providing language learning opportunities' in the classroom setting. The analysis has described how the teacher's sensitive contingent design of her prior and next turns in the sequence support the achievement of the child's multi-element turn. The way her support differed at successive time points was shown, as was the careful grading of support within each session. Whilst the sampling of the data may not have been sufficiently 'dense' to allow for conclusions to be reached about MA's spoken language development per se, nevertheless his progress over time in constructing increasingly complex multi-element turns with his teacher's support was also shown. At time point 1 when he is 3;5 years old, he joins a word with a supplementary gesture, at time points 2 and 3 (aged 3;10 and 4;1 respectively), his multi-element turns have two and more words, together with both supplementary and complementary gestures. By time point 4 when he is age 4;5, MA is constructing multi-word turns, some accompanied by complementary gestures. His use of gestures in some instances was shown to depend on T's use of gesture in her prior turns. In Example 3, when T prompted his multi-element turn using a gesture, MA then used that same gesture throughout the rest of the interaction, initially as a supplement to his turn (pulling (gesture) + turnip (word)) and then as a complementary gesture. There are further research questions to be addressed on this issue, for example, whether there any pattern in the supplementary and complementary use of gestures by both teacher and child in the interactions, and whether the teacher uses a gesture to prompt the child for particular grammatical units – the verb, in Example 3 - or simply for a semantic referent that

she anticipates the child will not know. Wauters, Knoors, Vervloed and Aarnoutse (2001) indicated that deaf children are advantaged in vocabulary learning when signs are used in teaching – this may also apply to the use of gestures. Since only manual gestures were taken into account in detail in the current analysis, examination of other non-manual non-verbal communicative behaviours such as posture and eye gaze may reveal other patterns in the data.

The teacher's turns following MA's multi-element turns gave equal credit to gestural and verbal elements of those turns. She accepts MA's gestural turn components at all times and does not insist on him producing a verbal version of the gesture. In addition, although MA gives relatively intelligible versions of words, he seldom pronounces them correctly. T does not use the Turn C position to initiate repair, neither does she insist on MA producing the correct form of words. Her strategy is to model the correct forms in her verbal receipt turns. Although her aim is to facilitate spoken language, and she is working within the natural oral method, clearly at this stage the actual form of the words used by the child is not of prime importance. Establishing consensus about meaning in the talk is sufficient.

The analysis has shown how effective the one-to-one sessions within the classroom environment are for language learning-teaching. This was seen in the child's progress over time, and also in respect of the teacher's support and reduction of support within each session. She was shown to provide support in a very natural manner, more like 'motherese' than like 'teacherese'. She skilfully does this without resorting to the sort of 'control' in classroom teaching style reported by Wood et al (1986). It is apparent that in the twenty-odd years on from their seminal work, teachers of the deaf have incorporated the findings into their practice and now provide activities in their individual work with younger children that genuinely offer language learning opportunities.

As has been suggested above, from the analysis of the data it appears that the teachers treat the child's turns in a way similar to mothers, and these interactions appear more like first language acquisition than like second language learning. The teacher however, is faced with the task of addressing the EAL deaf child's learning of

spoken English in the classroom. It seems that from this analysis, she does not display any overt orientation to MA's EAL status in their interactions, and she does not 'teach' him English. At this early stage of MA's education, she appears to be dealing with his deafness-related language difficulties, that is, his acquisition of spoken language. Thus she interacts with him in a way that facilitates his combining semantic referents in his turns as though he were learning English as his first language. The pedagogical issues around EAL and teaching English as a second language are subsumed by considerations of his anticipated difficulties in developing spoken language on account of his deafness. She provides the conducive communicative environment (necessary for any learner of a second language in the early stages of learning), before moving on to a more structured program of teaching later on (Swanwick 1998).

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Tables

Table 1: The data set

	Time point				Totals
	TP1 Summer term	TP2 Autumn term	TP3 Spring term	TP4 Summer term	
Age of child	3;5	3;10	4;1	4;5	
Duration of recording	7 mins	12 mins	6 mins	13 mins	
Number of MA turns	52	145	103	148	448
Single unit turns	37 (71%)	115 (79%)	39 (38%)	112 (76%)	303
Multi-element turns	15 (29%)	30 (21%)	64 (62%)	36 (24%)	145
Multi-element turns which are repetitions of teacher's prior turn	5 (33%)	15 (46%)	18 (28%)	5 (14%)	43
Novel multi-element turns	10 (67%)	15 (54%)	46 (72%)	31 (86%)	102

Figure 1a. Child's gesture 'away from school'

Note: The 'exit door' (pictured, behind the child) leads from the Unit nursery out of the school building, and the direction of MA's gesture towards this door is taken to mean 'away from school'.



Figure 1b. Child's gesture 'present in school'

Note: The 'nursery door' (which is in front of the child) leads from the Unit nursery to the mainstream nursery classroom and the direction of MA's gesture towards this door is taken to mean 'present in school'.



Figure 2 Teacher's gesture 'pulling'



Appendix 1: Transcription Notation

(Heritage and Atkinson 1984; Beeke and Wilkinson 2000)

- [a large left-hand bracket links an ongoing utterance with an overlapping utterance
- L or non-verbal action at the point where the overlap/simultaneous non-verbal action begins
-] a large right-hand bracket marks where overlapping utterances/simultaneous non-verbal actions stop overlapping
- = marks where there is no interval between adjacent utterances
- (.) indicates an interval of tenth of a second or less in the stream of talk (10ths of sec) Intervals between utterances
- . indicates a stopping fall in tone, *not necessarily the end of a sentence*
- ? indicates a rising inflection, *not necessarily a question*
- ! indicates an animated tone, *not necessarily an exclamation*
- :::: lengthening of vowel or consonant or syllable (more colons prolong the stretch)
- but- a single dash indicates a halting, abrupt cut off to a word or part of a word
- ↑↓ marked rising and falling shifts in intonation are indicated by upward and downward pointing arrows immediately *prior* to the rise or fall
- stress underlining indicates emphasis
- °no° degree signs indicate a passage of talk which is *quieter* than surrounding talk
- TALK capital letters indicate talk delivered at a *louder volume* than surrounding talk
- h,heh indicates discernable aspiration or laughter (the more hs the longer the aspiration)
- fu(h)n h in single brackets marks discernable aspiration or laughter *within* a word
- °h discernable inhalation (the more hs the longer the inhalation)
- >talk< lesser/greater than signs indicate sections of an utterance delivered at a greater speed than the surrounding talk
- ((moves forward)) double brackets indicate non-verbal activity

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