

Parents' questions to clinicians within paediatric hearing habilitation appointments for children with hearing impairment

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Abstract

Objective: To examine parents' questions to clinicians and how clinicians respond in paediatric hearing healthcare appointments with children with hearing loss.

Methods: The data consisted of 48 video-recorded hearing habilitation appointments. Participants included 22 clinicians, 41 children, and 48 parents/carers. Data were analysed using conversation analysis.

Results: A total of 89 questions from parents were directed to the clinicians in the appointments. Parents' questions were mostly designed as polar (yes/no) questions. The questions covered several action and topical agendas, and in most instances functioned as something other than merely soliciting information. The most prominent action agenda of parents' questions involved questions that displayed parental concern. These questions sought reassurance as well as information from the clinician.

Conclusion: While parents in this study did not ask a large number of questions during the appointments their questions performed important functions. Parents' questions cannot be assumed to be only about seeking information. Often parents' questions are in pursuit of reassurance from the clinician about their child's progress.

Practice Implications: Clinicians may need to provide encouragement to parents to ask questions during appointments. As part of delivering family-centred care, clinicians need to be aware that their responses may need to go beyond information provision.

Key words: Parents' questions; paediatric healthcare; hearing impairment; conversation analysis; clinician-patient interaction

1. Introduction

Around 32 million children worldwide have a disabling hearing loss (HL) [1]. Due to the significant effects HL can have on a child's speech and language development, educational attainment, and social and emotional well-being, early and ongoing intervention is essential [e.g., 2, 3-5]. It is important that families have an active involvement in their child's ongoing hearing care so that they become partners in their child's habilitation [6, 7]. A model of family-centred care (FCC) has been found to lead to improved health outcomes for children [8-12] and is recognised as best practice in the delivery of early intervention services for children with HL and their families [13-15].

FCC accepts the family as the client, rather than just the child with the health condition, and highlights the importance of health professionals and parents working together to address the child's needs [16]. A key aspect of family-centred care includes fostering family participation in interactions with their child's healthcare professionals [16, 17]. Question-asking is a primary way in which parents can initiate their own involvement in their child's hearing appointments [18] and is thus an important communication behaviour to understand for the facilitation of FCC within appointments. There has, however, been very little research involving direct observation of family-centred communication practices in paediatric hearing habilitation appointments [19, 20], and in particular, no research to date has investigated parents' questions in hearing habilitation appointments with children with HL.

1.2 The function of questions in interaction

Research in Conversation Analysis (CA) has examined the types of social actions that questions implement in interaction, and the consequences for the conversation [for a review see 21]. While questions are traditionally seen as resources for seeking information from

another party, they are actually a versatile resource to implement a wide range of actions [21-24]. Questions set two agendas: (1) an action agenda (what the speaker is doing with the question); and (2) a topical agenda (what is being talked about) [21]. For example, the question “Are you gonna give her antibiotics?” is an enquiry (action agenda) about antibiotics (topical agenda). Stivers [25] has shown how this sort of question from parents in GP appointments exerted pressure on the physician to prescribe antibiotics for their child. Questions from parents within healthcare appointments can thus perform a range of actions that have consequences for a child’s health care, and are worthy of further attention.

In order to better understand family-centred communication practices in paediatric hearing habilitation appointments, this study examined parents’ questions during appointments (including audiology and speech-language pathology (SLP) appointments), with a particular focus on how parents design their questions, the types of actions that they accomplish within the interaction, and how clinicians responded.

2. Material and methods

2.1 Data and participants

The data for this study included 48 video-recorded paediatric hearing habilitation appointments with families with children who had been fitted with cochlear implants (CIs). These appointments included 33 audiology appointments and 15 SLP appointments and were collected in 2015-2017 from three clinical sites in Australia. Participating children had moderate to profound unilateral or bilateral HL, and CIs in one or both ears. Most appointments had only one clinician in the room with the family, however some audiology appointments had both an audiologist and an SLP in the appointment.

2.2 Procedure and analysis

The data collection procedure for this study is described in detail elsewhere [20]. All participants provided written informed consent. This study was approved by the Children's Health Services Queensland Human Research Ethics Committee and The University of Queensland Human Research Ethics Committee, in addition to site specific ethics committees. The study adhered to the principles of the National Health and Medical Research Statement on Research Involving Human Subjects.

The video data was transcribed using the Jeffersonian and Mondada transcription systems [26, 27]. The data was analysed using conversation analysis (CA), a well-established method for examining healthcare interactions [28-30], including in audiology and speech pathology [20, 31-33]. For the current study, the data was searched for all questions from parents (including repeated or re-formulated questions). The collection of parent questions were then analysed for their design, topic agenda(s), and action agenda(s). Clinician responses to parents' questions were also analysed. Author KE initially analysed the data, which was verified by the other authors as well as other CA experts in data sessions. In each of the fragments presented, SLP=speech-language pathologist, A=audiologist, C=child, and P=parent. For the multimodal transcription, the body movements of A are marked between the Δ symbols, those of SLP between the \wedge symbols, those of C between the * symbols, and those of P between the + symbols.

3. Results

Audiology appointments ranged in duration from 27-70 minutes (Mean = 47.6, SD = 13.1) and the SLP appointments ranged from 16 – 73 minutes (Mean = 55.3, SD = 14.7).

Participants included audiologists (n=14), speech-language pathologists (n=8), children with

HL (n=41), and their attending family members (e.g., parents/carers) (n=48). Some children recorded more than one of their appointments. Children were aged 18 months to 13 years (Mean = 4.8 years, SD = 3.3). Twenty nine percent of the children had been receiving hearing habilitation for under 12 months, 55% for 1-5 years, and 16% for over 5 years. Family members attending the appointments included Mothers (n=36), Fathers (n=4), Mothers and Fathers (n=6), and Grandmothers (n=2). Participating clinicians were all female, and 78% had over 5 years' clinical experience.

3.1 *Overview of parents' questions in the appointments*

Across the corpus of 48 appointments, there were 89 questions from parents directed at the clinician (range: 0-8 questions per appointment). Parents thus asked an average of almost 2 questions per appointment. This collection included 76 questions from the 33 audiology appointments, and 13 questions from the 15 SLP appointments. Almost all of the parents' questions were self-initiated (n=87) and the remaining 2 questions were asked in response to a direct invitation from the clinician (i.e., "do you have any questions?"). These invitations from clinicians occurred in 29% of appointments, and always during the final minutes.

Parents' questions were not typically designed as open questions, rather 74% of the questions were designed as polar (yes/no) or alternative "or" questions (see Figure 1). Only 26% of questions were designed as Q-word questions (i.e., who, what, where, when, why, and how questions). The constrained design of the majority of parents' questions set up a specific response from the clinician (either confirmation/disconfirmation or a forced choice between two alternatives) rather than broader information provision.

.....Figure 1 here.....

The action agendas of parents' questions in this corpus covered nine key domains (see Table 1). Within these different action domains, the questions covered various topical agendas (e.g., the child's hearing experience, CI map/assessment results, home care, and device technology).

.....Table 1 here.....

Information solicitation was the primary action of 19% of parents' questions, and these questions were often concerned with technological aspects of the child's CI or other hearing devices (e.g., FM system). The other 81% of questions in the corpus were identified as primarily being in pursuit of another type of action wherein parents used questions to perform a range of actions beyond soliciting information from clinicians. The most common action agenda of parents' questions involved indexing a stance of concern (21%). These questions not only solicited information but also sought reassurance from the clinician about their child. Other questions that involved actions beyond information-solicitation or a confirmation check included: a challenge of the clinician's prior talk (10%), a proposal for a change in action (9%), seeking advice for a planned course of action (9%), and requests (6%). To analyse all of the different action agendas of the questions that went beyond information solicitation in detail is beyond the scope of one paper so the remainder of the paper will focus on examining the most prominent action-type in the data: parents' questions that indexed a stance of concern. These questions were also interesting to explore in relation to parents' informational and emotional needs within appointments.

3.2 Parent questions that indexed concern

These questions from parents covered several topical agendas but always displayed an uncertainty from the parent as to how well, or to what extent, their child was hearing/speaking in daily life. In displaying this uncertainty, parents indexed a stance of concern about their child. These questions typically involved multiple hesitations across the turn that were not observed in other types of questions from parents. The questions also often asked for a comparison to a norm, displaying an implied uncertainty from the parent as to whether their child was 'normal'. In 63% of clinicians' responses (n=12), they oriented to the parent's concern by providing both information provision and reassurance (a positive assessment of the child's progress). Their responses also sometimes involved suggesting a plan to more precisely check aspects of the child's hearing in the next appointment in order to allay the parent's concern. In the other 37% of responses, clinicians responded with information provision only. The systematic patterns observed in parents' questions that indexed concern will be examined further across the fragments below.

Fragment 1 comes from an audiology mapping appointment. In this appointment, there was an audiologist, an SLP, the child, and her mother. The fragment begins 31 ½ minutes into the appointment, following the child's testing.

-----Insert Table 2 here-----

At lines 1-4, the audiologist provides a summary of the CI map changes in the appointment. After the parent acknowledges this information, the audiologist turns her attention to the child (addressing the child by name at line 9). At this point, the parent enters in overlap to ask the clinician(s) a question. The turn begins with some hesitation (two re-starts and 0.2 second pause), suggesting the parent has some initial trouble in formulating her question. The

question asks for a comparison: how much hearing does her child have compared to the 'normal' hearing of her or the clinician(s). The question begins as a Q-word "how" question but is subsequently further specified [34] as an alternative "or" question: "is it similar sort of levels or considerably lower?" (lines 14-16). In asking this 'comparison' question, the parent displays an underlying assumption that her child's hearing is not at the same level. In the subsequent, further specified, question the parent presents one of the available two response options as her child's hearing being "considerably lower" (line 16). This question from the parent thus (1) displays uncertainty around the hearing experience of her child; and (2) indexes concern that her child's hearing is much lower than the average person even with her CI.

The audiologist initially provides a non-answer to the question: "It's difficult to tell", thus not keeping to the design constraints of the alternative "or" question. This initial response highlights that the response is less straightforward than the question design would suggest. She then goes on to provide some information in her expanded response. In addition to this information provision, the audiologist also provides several positive assessments: the child has "good exposure to very soft sounds" (line 19), she is "quite happy" with the levels of sound the child is getting (lines 22-23), the child is "starting to progress a lot more now" (lines 25-26), and "progressing quite rapidly now" (line 31). These positive assessments provide reassurance to the parent of the child's hearing progress with the CI. Across the last positive assessment ("She's (0.3) progressing quite rapidly now, line 31), the parent looks at the child and smiles. The speech pathologist also suggests a "review" (line 42) at the child's next appointment to further check her hearing. In providing the parent with a plan for future action, the clinicians offer further reassurance that the child's hearing levels will be properly assessed in order to provide further information to the parent. These responses from the

clinicians display an orientation to the parent’s concern in her question and respond with not only information provision but also reassurance. The parent replies with an acknowledgment and a positive assessment: “okay cool” (line 52).

Another example can be seen in Fragment 2, which comes from another audiology mapping appointment. Again, there is an audiologist and an SLP in the appointment with the child and her mother. The fragment begins following the mapping tests, when the audiologist is informing the parent of the outcome.

-----Insert Table 3 here-----

At the beginning of the fragment, the audiologist provides the parent with information following the child’s CI mapping. At lines 15-16 the parent then asks a question. The parent’s ‘how’ question is concerned with how loudly her daughter can hear (“So h↑ow- it's probably hard to say=but how loud are things <for her> at the moment? Is that just too- you can't really:”). The parent orients to this being a difficult question and manages the potential for a non-answer from the clinician(s) by adding the parenthetical “it’s probably hard to say” mid-turn and adding an increment to the question “Is that just too- you can’t really:”. In asking this question, the parent displays uncertainty around the level of sound her daughter experiences, and indexes a stance of concern that sounds might not be particularly loud for her. Towards the end of the parent’s question, the audiologist gives a slight smile and shakes his head. When he begins speaking he confirms that he can’t really answer that question. However, he continues to “hazard a guess” and provides the parent with some information on the child’s hearing. This initial response from the audiologist involves information provision but no reassurance. The parent acknowledges the information with an “okay” and a one

second gap ensues in the interaction. The parent then takes another turn to provide a formulation of the audiologist's prior response: "So she'd be h- (0.8) hearing noi- a l- quite a few sounds" (line 32). This formulation is littered with hesitations, showing some difficulty in the parent producing the turn. The formulation requests further confirmation from the clinicians that her daughter can hear "quite a few sounds". In this way, the parent re-opens the question for a further response. The parent's concern is thus re-iterated with this turn. The audiologist provides confirmation with a minimal "yes" and "yep" (lines 34 and 37). The parent then adds an increment to her prior formulation "But obviously not making any meaning" (line 38). In adding this increment, the parent again opens up the need for further confirmation from the clinicians. The audiologist confirms this with a minimal "no" response (line 40), but the SLP then enters the conversation to provide an expanded response (line 41). In her response, she provides some reassurance to the parent that while that is correct, the daughter had shown evidence during the appointment that she was "certainly" aware of sounds by turning her head to sounds and pointing (a point which is repeated three times across the turn). The speech pathologist adds a positive evaluation of this behaviour as being "very good".

This example showed that sometimes reassurance was not immediately forthcoming in response to parents' questions that indexed concern. In Fragment 2, the parent then took additional turns that sought further responses from the clinicians until some reassurance was provided. Fragment 3 provides an example from another audiology appointment where the clinicians responded to the parent's concern question with information provision but not reassurance. In this example, the parent then asked a similar question again later in the appointment.

-----Insert Table 4 here-----

This fragment begins 5 minutes into the mapping appointment when the clinicians are still setting up for the testing. The parent initiates a turn at line 10 to provide an account that her son seems to have no threshold for loud noises. Across this account she provides two extreme case formulations that her son has no threshold for loud noise “at all” and no loud noise “whatsoever” bothers him. With these extreme case formulations, she constructs her son’s behaviour as not normal. This account is followed directly by the question: “Is that normal?”. The question is designed as a polar question, placing constraints on the response to be a simple ‘yes’ or ‘no’¹. In asking whether the behaviour is normal, she sets up a comparison of her son’s behaviour against ‘normal behaviour’ thus displaying a concern that her son should be more bothered by loud noises. Both clinicians reply by nodding their heads, confirming that the behaviour is normal (line 17). The parent responds with a check “yeah?” followed by “okay”. The audiologist starts to provide a more expanded response but is interrupted by the parent who provides a justification for her question. The parent explains that she had read on internet forums that other children with CIs were “so concerned” with loud noises in comparison to her son who “is happy” when he hears loud noises. Again, across this turn the parent uses extreme case formulations to set up her son’s behaviour as being opposite to other children. In this way, it challenges the clinicians’ prior ‘yes’ responses that his behaviour is normal. The speech pathologist responds with information provision, explaining that loud sounds are “capped” for the child. The audiologist adds that they had commented previously that the child’s brother is so loud that he had ‘good training’ for loud noise. The speech pathologist laughs in overlap with audiologist’s turn. These responses, while providing

¹ While the parent’s question “is that normal?” grammatically prefers a ‘yes’ response, her prior account has set up her son’s behaviour as abnormal thus preferring a ‘no’ response. The question thus carries cross-cutting preferences.

information, do not provide reassurance to the parent and in fact downgrade the seriousness of the parent's concern.

Around 17 ½ minutes later, the audiologist is providing an evaluation of the child's performance during the mapping. After acknowledging this evaluation ("Okay", line 58), the parent asks a similar question to the clinicians to the one seen at the beginning of the appointment: "Is there- is there lots of difference betwee:n...uh other (0.3) cochlear (.) users (0.3) an- (0.2) and Jack? Like it- .hh do others have the same range always=is- is that normal?". The parent provides a series of three questions, each of which narrow the specificity of the question in turn (following a misunderstood response from the audiologist at line 62). Again, the parent here questions her son's hearing range in comparison with other CI users, and whether her son is normal. She thus again displays a stance of concern that her son's hearing is not normal, even in comparison with other children with CIs. The audiologist launches an expanded response in a non-conforming format, highlighting that a response to this question is not straightforward. Her response initially entails information provision before providing a positive assessment that the child's range is "more than average it's a good range" (lines 73-74). The parent replies with a positive assessment "Mm good" (line 77). This is followed by further information provision from the audiologist with another positive assessment "that'll be good" (line 81), and another positive assessment from the parent in response (line 82). The speech pathologist, who has been interacting with the child, turns to the parent at line 86 to also add that the range is "quite individual" thus addressing the parent's comparison of her child's range to a norm. The positive assessments from the clinicians across this sequence provided reassurance to the parent in addition to information provision in response to her question.

4. Discussion and Conclusion

4.1 Discussion

This paper examined parents' questions to clinicians during paediatric hearing habilitation appointments for their child with HL. Overall, parents did not ask clinicians a large number of questions during appointments: there was a total of 89 questions across the 48 appointments. This finding is similar to research in adult healthcare settings, which has also found that patients do not ask many questions [35, 36]. In this study, parents' questions were almost always self-initiated (rather than being invited) and produced at various points during the appointment. A study of adult patient question-asking in oncology consultations similarly found that only 22% of patients' questions were in response to a prompt from the doctor at the end of the consultation [37]. Parents asked more questions in audiology appointments than in speech therapy appointments across all of the identified action agendas. This finding may be because families typically have more regular speech therapy appointments, and thus more regular opportunities to ask questions, than audiology appointments (which may be only every 3, 6, or 12 months) but this finding would need further exploration. The finding may also relate to a number of technology-focussed questions being asked in the audiology appointments, which are less relevant in the speech therapy appointments.

The findings showed that parents' questions were often designed for a specific response from the clinician rather than asking broad, open-ended questions. The results also showed that parent's questions functioned to accomplish various different actions other than merely seeking information. The most prominent action agenda of parents' questions involved indexing a stance of concern about their child. These questions from parents were typically delivered with hesitations across the turn (more so than other types of questions), suggesting that parents found asking this type of question difficult. This finding that question-asking can

be difficult, and even dispreferred, for patients has also been found in adult healthcare settings [36]. These types of questions sought reassurance from the clinician in addition to information provision. When reassurance was not forthcoming in the clinicians' response, parents tended to produce additional turns (e.g., formulations, additional questions) to pursue a different response. Research in cancer care has previously found that for people calling cancer helplines, their psychosocial needs were intrinsically intertwined with their information- and advice-seeking needs [38]. In other words, callers were seeking support just as much as they were seeking information from the nurses on the helpline. It would seem that it is the same for parents in these appointments with their child's clinicians.

The literature on FCC in paediatric hearing habilitation emphasises that clinicians should have 'open communication' and 'provide both informational and emotional support' as part of developing family/provider partnerships [17]. The findings from this study provide evidence that parents were in fact often seeking both information and emotional support from clinicians. Similarly, a meta-analysis of FCC in paediatric healthcare highlighted the need for an equal emphasis on clinicians' use of relational and participatory help-giving practices [10]. In most instances in the corpus, clinicians showed an orientation to parents' concern in their questions and provided both empathy/reassurance and information in their responses. These responses are in line with recommendations by Epley et al. [16] whose conceptualisation of FCC included clinicians "offering families a sense of hopefulness by emphasizing strengths and progress" (p.276) of the child. Clinicians' reassuring responses in this study thus showed an example of how they can provide parents with empathy and a sense of hopefulness within appointments and thus how this principle of FCC can be implemented into their communication in practice. There were however some opportunities to reassure parents that

were missed in the appointments when clinicians responded to parents' questions indexing concern with only information.

Future research is needed to examine in more detail the other types of questions from parents identified in this study. For example, 10% of the questions in this corpus involved a challenge of the clinician's prior talk. These types of questions from parents warrant further investigation. Further research is also needed to explore parents' questions in other types of paediatric healthcare settings as there remains a dearth of research in this area.

4.2 Conclusion

While parents did not ask a large number of questions in each appointment, their questions accomplished various important actions that went beyond just seeking information from clinicians. This study has particularly focussed on parents' questions that indexed a stance of concern. These questions sought reassurance from clinicians in addition to information provision, thus highlighting that parents had both emotional and information needs within their child's ongoing hearing habilitation appointments.

4.3 Practice Implications

Given that question-asking is a key way that parents can participate in the interaction during appointments, shape their level of involvement, and ensure that their needs are met [37, 39], there may be a need for clinicians to further encourage parents to ask questions throughout their ongoing appointments. Parents in this study had questions and concerns about their child's hearing progress despite already having had multiple previous appointments. As part of delivering family-centred care, clinicians thus need to be conscious that the information needs of families are ongoing beyond the initial decision-making stages of treatment [17]. In

adult healthcare, question-asking has been encouraged through patients' use of question prompt lists (QPLs) [e.g., 40, 41]. Clinicians may also need to overtly ask parents if they have questions or concerns at various points during each appointment as this only occurred in 29% of appointments, and always only at the end of the appointment. Further, clinicians always did so in the format of asking parents "do you have any questions...?", which grammatically prefers a "no" response from parents [42]. In comparison, asking a patient if they have "some questions" is more likely to solicit a question in response [42]. If given interactional spaces to ask a question throughout the appointment, parents may feel more comfortable in raising their concerns.

The findings from this study also highlight that clinicians should be aware that parents may be seeking more than just information when asking questions during appointments. Likewise, clinicians should be aware that parents may not always express concerns in a direct manner (e.g., "I am worried that...") but that their concerns may be embedded within questions. As part of delivering FCC, clinicians need to listen carefully to parents' questions and understand when parents may be communicating a concern and seeking reassurance. Responses to parents' questions need to be multifaceted to fully meet parents' needs within the appointment.

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Table 1: Action and topical agendas of parents' questions

Action agenda	Topical agendas	n (%)	Example
Index a stance of concern, seek reassurance	C's hearing experience C's speech ability CI program setting Device usage Change in map	19 (21%)	<p>P: So how much- ha- so (0.2) when we talk about hearing in like you an' I how much hearing has she got in comparison?=Is it s:imila::r (0.7) sort of levels? Or is it [significantly lower?]</p> <p>A: [.tch it's difficult to] te::ll, It's different to what <u>our</u> hearing is li:ke but what we can tell is Kelly's got a good um exposure, has good exposure to <u>very</u> soft sounds and she can tolerate quite a bit in te(h)rms fof loud sounds.&</p> <p>P: Yep.</p> <p>A: She's not really bothered, so I'm quite happy with the levels that she's getting,</p>
Information-solicitation	Technology/device C's responses during task	17 (19%)	<p>P: Do you have to pair it every time that you change the battery?</p> <p>A: No it's um- just- it holds the memory.</p>
Check prior to immediate action	Rules of activity/task-at-hand Device requirement for activity/task-at-hand (e.g., device on or off)	12 (13%)	<p>P: Do you need the hearing aid off?</p> <p>A: We'll wait until we're ready</p>
Challenge of HP's prior talk	Assessment/test results Device usage results Accuracy of test	9 (10%)	<p>P: So would you class it as a moderate severe: [or would] you still class it as a severe?</p> <p>A: [Yeah so]</p> <p>A: Yeah it would- I would probably sa::y (3.0) moderate sl:oping to s:evere.</p> <p>P: Yeah.</p> <p>A: [Yep,]</p> <p>P: [So] he's definitely- his hearing is <u>better</u>,=</p> <p>A: =Yeah and also in the higher- maybe having the wax cleaned out.</p> <p>P: [Yeah, yeah <u>maybe</u>,]</p> <p>A: [Um and all of <u>that</u>] can [imp:act.]</p> <p>P: [But um,] I mean from when he was bo:rn and he didn't- [y'know] like</p> <p>A: [Yeah.]</p> <p>P: wax issues: [>I mean] that's all the-< I DON'T</p> <p>A: [Yeah]</p> <p>P: understand how his hearing could get better.</p>
Proposal for change	Habilitation plan	8 (9%)	<p>P: When are you going to start telemapping? (.)</p> <p>P: In reality?=Are they still doing that?</p>

Action agenda	Topical agendas	n (%)	Example
			(0.8) A: Yeah they are (.) u::m <where do you live?>
Asking advice for a planned course of action	Aspect of home care	8 (9%)	P: †And with his hearing aid, (0.4) like we haven't- >to be honest< we haven't put it in this week because we didn't want to like (0.3) <u>confuse</u> him, SLP: Yep, P: Should we put it on? (0.3) P: Or is it something that we leave for another (0.2) SLP: †Um (0.2) given that we haven't <u>checked</u> his <u>comfort</u> with hearing aid and <u>processor</u> I'd say maybe:: (0.3) A: Have you got it with you now? P: No, no I [haven't.] A: [Yeah] maybe next time
Clarification of understanding	Jargon terms Aspects of technology/device Test procedure	6 (7%)	SLP: †I'll just keep it wound out though, see how you go an' (.) maybe just every so often <u>check</u> to make sure that there's no <u>redness</u> there, it just seems to [stick better.] P: [So when it's] wound in more it's stronger?= SLP: =Stronger yep.
Request	P's actions in current task Technology-related (device, batteries)	5 (6%)	P: Can I do a practice with him to show him? SLP: Yeah, good idea, do a practice first.
Unpacking ambiguous reference	Ambiguous reference term or pronoun use	2 (2%)	A: Y†eah I think it's just changed a bit. (2.5) P: You mean the processor? A: Uh no the map.
Ambiguous/boundary cases – treated by HP as possibly indexing concern	CI map change	3 (3%)	A: °Okay jump over to the left.° (0.9) P: It's a big change hey? A: Mm: (.) A: It is on [that side] P: [Did al-] all just go up? A: Yeah. A: But it goes up one time and down [the next ti(h)me.] P: [I kn(h)ow hah hah hah] .hh as long as we're not- A: It just has to be right.
Total		89 (100%)	

A=Audiologist, SLP=Speech-Language Pathologist, P=Parent

Table 2: Fragment 1 - [A12+SP11-C35 31:22]

1	A:	>I've focused on the left< it's only changed very very
2		<u>slightly</u> ,
3	P:	Yep.
4	A:	But she probably won't even notice much of a difference.
5	P:	Okay.
6		(1.2)
7	P:	Cool,
8		(0.3)
9	A:	Ke[lly?]
10	P:	[So] how much- ha- [so (0.2) when we] talk about
11	SLP:	^[Oh what happened?]^
12		^Looking at C-----^
13	P:	hearing in like you an' I how much hearing
14		Δhas she got in comparison?=Is it s:imila::rΔ
15	A:	ΔGaze at P, raises eyes, moves mouth to left sideΔ
15	P:	+(0.7) sort of leve[ls, or is it]+
		+shifts gaze to HP2-----+
16	P:	+[considerably lower.]+
		+Looks back HP1-----+
17	A:	Δ[.tch it's difficult to] te::ll, It's different to what <u>our</u>
18		hearing is li:ke but what we can tell is Kelly's got a good
19		um <u>exposure</u> , has good exposure to <u>very</u> soft sounds and she can
20		tolerate +quite a bit in te(h)rms <u>fof</u> loud sounds.£
	P:	+Nods----->
21	P:	Yep.+
		-----+
22	A:	ΔShe's not really bothered, so I'm quite happy with the
23		<u>levels</u> that +she's getting,+
	P:	+Nods-----+
24	P:	Yep.
25	A:	ΔI th↑ink (0.6) she:::Δ Δis starting to progress a <u>lot</u>
		ΔTurns to look at C----Δ Δturns back to P, rolling hands->
26		+more <u>now</u> Δ+
		-----Δ
	P:	+nods-----+
27	A:	and Δ <u>really</u> we need to measure and check exactly what she's
28		getting +out of those processors,+so I c↑an't really give you
	P:	+Nods-----+
29	A:	a full answer <u>yet</u> , because I'm <u>really</u> only seeing
		+much of a difference with her+ <u>now</u> .
	P:	+Nods-----+
30	P:	Yep.
31	A:	+She's (0.3) progressing quite rapidly n↑ow,+
	P:	+Turns to look at C, smiles, looks back at HP1+
32	P:	Yep.
33	A:	ΔI guess <u>Louise</u> might be <u>better</u> (.) equipped to tell youΔ
		ΔLooks at HP2-----Δ
34		Δhow she's progr↑essing because she's known her for a <u>lot</u>
		ΔLooks at P----->
35		longer [than] <u>me</u> ,Δ
		-----Δ
36	SLP:	^[Yeah.]^
		^Looks at P^
37		(1.1)
38	SLP:	[I think it might be] timely at the next- at the next <u>point</u> to
39	A:	[In terms of ()]
40	SLP:	sort of jus'
41	C:	Aah.

42 SLP: check in and do a little bit of a rev[↑]iew.
43 P: +Yep+
+Nods+
44 SLP: Coz this has [been a big- a big] change,
45 A: [To see what she's got]
46 P: +Yep,+
+Nods+
47 SLP: from our last- our last sort of assessment point,
(0.4)
48 SLP: U:m so I think we can [look] as well.=
49 P: +[Ooh.] +
+Looking at C+
50 P: +=H[↑]i.+
+Looking at C+
51 (0.6)
52 P: +Okay cool.+
+Turns back to look at HP2+

Table 3: Fragment 2 - [A11+SP12-C38 23:54]

1	A:	So we'll get you <u>again</u> four [prog]rams to work <u>through</u> .
2	P:	[Yep.]
3	P:	Yeah.
4	A:	ΔWhich sort've <u>essentially</u> <u>starting</u> what was number four;Δ ΔRaises hands horizontally, and gradually moves them up-->
5	P:	Yep,
6	A:	But then with three more.Δ -----Δ
7	P:	Yep.
8	A:	Yeah.
9	P:	Okay.
10	A:	But I don't think we're <u>too</u> far off Melody's <u>range</u> anyway.
11	P:	Okay,
12	A:	Probably in the next couple of sessions I [think.]
13	P:	[Yep.]
14		(0.3)
15	P:	So h↑ow- it's probably <u>hard</u> to say=but how loud are things <for
16	her>	at the moment? ΔIs that just too-Δ you Δcan't really:Δ
	A:	Δslight smile-----Δ Δshakes head--Δ
17	A:	Not [really.] If I was to hazard a <u>g<u>u</u>↑<u>e</u>ss</u> I [would] sa:y (0.3)
18	P:	[Nup.] [Yep,]
19	A:	<u>this</u> pro:gram she's hearing now is Δ <u>maybe</u> a bit below medium;Δ Δshakes hand horizontally-Δ
20		(.)
21	P:	Okay,
22		+Δ(1.6)+Δ
23	P:	+Nods+
24	A:	ΔNodsΔ
25	A:	So w- with us speaking at this [level] that would be my::
26	P:	[Yep.]
27	A:	*(0.6)* my educated <u>gue[ss</u> yeah.] *C's right CI falls off*
28	P:	[Okay.]
29		Δ(0.2)Δ
	A:	ΔNods, smilesΔ
30	P:	Okay.
31		+(1.0)
	P:	+Notices C's CI and places it back on C's head->
32	P:	So she'd be h- (0.8) <u>hearing</u> noi- a l- quite a few <u>sounds</u> .+ -----+
33		(.)
34	A:	ΔYes.Δ ΔNodsΔ
35	P:	Yep.
36	C:	mm::
37	A:	Yep.
38	P:	+But obviously not making any <u>meaning</u> .+ +Looking at C's head-----+
39		(0.4)
40	A:	ΔProbably not [no]Δ ΔShakes head-----Δ
41	SLP:	[Co]rrect [yep] but she's a[ware] of the sound
42	P:	[Yep.] [Yes]
43	SLP:	[of-] <u>certainly</u> was aware (.) and looked at Bob [when] he
44	P:	[Yeah] [Mm:]
45	SLP:	turned them <u>off</u> Δ[an'] she wasΔ pointing [like] she [was]
	A:	ΔNods-----Δ
46	P:	+ [Yes.] [Yes.]

+Nodding----->

47 A: [Mm.]

48 SLP: aware of the [sound]

49 P: [Yeah]+
-----+

50 SLP: coming and [going] which [very] goo:d.

51 P: [Yep] [okay]

Table 4: Fragment 3 - [A7+SP11-C23 5:25]

1	A:	It's all pre:tty stable an' working well with it?
2		(0.7)
3	SLP:	Excellent.
4		+(0.5)+
	P:	+Nods--+
5	SLP:	^All ready?^
		^Looking at HP1^
6	A:	Fifty two ah:::::
7	SLP:	Almost?
8	A:	Al <u>most</u> . Almost close,
9	SLP:	^Just waiting.^
		^Looking at C-^
10	P:	Thanks .hhh eh he doesn't have to se- uh he doesn't seem to
11		have a:: (0.7) threshold (0.3) of +loud noises <u>at</u> all,+
		+Shaking head-----+
12		(0.3)
13	P:	like <u>no</u> [loud noise wha]tsoever would bother +him.+
		+Raises shoulder+
14	SLP:	[He's quite ha-]
15	A:	ΔMm yeah,Δ
		ΔTurns to computerΔ
16	SLP:	[↑mhhh,]
17	P:	+<u>[Is that] normal?</u>+
		+Turns to look at HP2+
18		Δ^(0.8)Δ^
	A:	ΔNods--Δ
	SLP:	^Nods head, turns to look at HP1 while nodding^
19	P:	Yeah? +Okay.+
		+Nods--+
20	A:	Mm think, (0.2) I made this [comment that um]
21	P:	[Coz lots of peo]ple >on the- on
22		the- net< on the internet in these forums [they're all] so
23	SLP:	[Y↓ea:h,]
24	P:	con <u>cerned</u> about these loud noises=and their kids are <u>cry</u> ing and
25		.hh have to be- [block their ears]
26	SLP:	[↑Okay, so <u>where</u>] would that have been?
27	P:	In a shopping centre [or]
28	SLP:	[Mmhm,]
29	A:	Mm.
30	P:	Jack doesn't seem to be bothered + <u>at</u> all.+He >like< he is
		+Shakes head+
31		happy when it's loud an' (.)
32	SLP:	Yeah,
33	P:	it's funny °I don' know° (.) but (.) +[um but]+
		+Raises shoulders,
		scrunches nose+
34	SLP:	[Coz SOME] time ago
35		remember Δwe would have spoken >about it-< (.) like- th- those
		Δraises hands horizontally----->
36		loud sounds being (.) <u>capp</u> ed if you like.Δ
		-----moves fingers up and downΔ
37	P:	+Mm.+
		+Nods+
38	SLP:	+U:::m (0.4)+ so that's (0.3) a good way of <u>explai</u> ning it in
	P:	+Nods-----+
39	SLP:	m↑any ways,
40		(0.8)
41	A:	Yep.

42 SLP: °°Alright?°°

43 A: I th↑ink because he's maybe- we made this comment last time

44 that his brother was so loud that he's [probably had]

45 SLP: [huh huh huh]

46 A: [good training for it.]

47 P: [Used to it probably.]

48 A: Ye(h)ah.

49 ((17 ½ minutes later))

50 A: He's getting better at- he's getting better at the loud ones I

51 think

52 SLP: Yeah [he is]

53 A: [coz:] he's not (0.3) taking it up (0.2) too loud, he

54 knows when to stop.

55 P: [Mm:]

56 A: [but] he's got a good range in hea[ring] so it's pretty goo:d.

57 P: +[Yep,]+
+Nods--+

58 P: Okay.

59 (0.4)

60 A: That's [pretty broad.]

61 P: [Is there- is] there lots of difference betwee:n

62 A: Very- jus' little changes here and [there.]

63 P: [No I] mean between uh

64 **other (0.3) cochlear (.) users (0.3) an- (0.2) and Jack?**

65 **Like it- .hh do others have the same range**

66 **Δalways=is- is that normal?Δ**

A: ΔNods-----Δ

67 A: .hh l↓ook unless y↑ou:'re (.) s↑ome people <mo:re> >older

68 people not so much children< but the older people who have had

69 loss for a while or people who were born deaf (.) they can't

70 tolerate a lot of extra s↑ound because they've never been

71 exposed to sound as they've been del- developing,

72 So:: u:m (.) you've got those odd cases where it's a very small

73 ra:nge but this is- this is more than average it's a

74 Δgood rangeΔ
ΔNods-----Δ

75 A: +Yeah.+

76 P: +Nods-+

77 P: +°°Mm good°°+
+Nods-----+

78 A: ΔSo it j↑ust means that a whole +range of soundΔ will be

ΔMoves hands out wide-----Δ

P: +Nods----->

79 A: available to him+ and he'll be able to tell those

P: -----+

80 A: Δfine differences betweenΔ soft Δan' mediumΔ and everything in

Δpresses fingers togetherΔ Δraises hand upΔ

81 A: between so [that'll be good.]

82 P: [Mm yeah,] that's good.

83 A: That gives a bit more um .tch breath to the speech signals.

84 P: Mm, mm.

85 A: Yeah.

86 SLP: ^But ↑it's quite individual that range.^

^Turns to look at P-----^

87 (0.3)

88 SLP: ^Yeah.^
^Nods-^

89 P: Yeah, Okay.