

Other-initiation of repair by speakers with mild to severe hearing impairment

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Abstract

Hearing impairment is a common chronic condition in middle-aged and elderly adults. The number of individuals with hearing impairment is expected to rise because of the longer life expectancies and trends in the population growth. Acquired hearing impairment in adulthood is not just a disorder of the sense of hearing. It is primarily a social disability because its handicapping effect is experienced in interaction with other people. This paper aims to explore how the repair of problems in hearing are initiated by hearing-impaired individuals with acquired mild to severe hearing impairment. By using the method of conversation analysis (CA), this paper examines the occurrence of other-initiations of repair (OIR) and how it is typically resolved in actual mundane interaction. In addition, this paper reveals the challenges and the impact of hearing impairment as the state of hearing deteriorates. This article argues that the frequency of OIR in mild hearing impairment does not differ from normally hearing individuals. However, in a more severe grade of hearing impairment, the OIR sequences are longer, more frequent, multimodal and may require more vigilance from the normally-hearing conversation partner. Implications for counselling are suggested.

Keywords

conversation analysis, embodiment, hearing impairment, other-initiation, repair, social participation

Introduction

At times, we all struggle to hear and understand what was said to us. Our attention is elsewhere, there is too much background noise, or the speaker has a soft voice. These are some of the very common reasons why requests for clarification like 'What?' are produced. We need to hear again what was said and typically that is enough to move forward with the conversation. However, when it comes to diagnosed hearing-impairment, the challenges in hearing increase. Even peaceful and quiet surroundings can be difficult and ones with poor acoustics with stratified noise can be impossible for conversation. An acquired hearing-impairment in adulthood typically

increases slowly in severity and is related to aging (Wattamwar, et al., 2017). It is estimated that approximately 1/3 of people over 65 years old and 2/3 of people over 75 years old have a hearing-impairment (Deafness and hearing, World Health Organization [WHO], 2019a). In addition, at least in Finland, the number of people over 65 grows and is estimated to reach 21,8% by y. 2050 (Statistics Finland, 2019). The impact of a hearing-impairment in terms of overall hearing and detection of speech varies according to the grade of hearing-impairment (World Health Organization [WHO], 2019b) and quality of the disorder. A hearing-impairment can be mild (26-40 dB), moderate (41-60 dB), severe (61-80 dB), or profound (over 81 dB). Thus, a normal speech volume around 40-60 dB is difficult to perceive as hearing deteriorates. Moreover, the handicapping effect of hearing impairment varies according to affected frequencies. For example, aging typically deteriorates hearing on higher frequencies (Worrall & Hickson, 2003:73). Thus, birds and crickets cease to sing and make noise, but also certain speech sounds and especially children's voices become difficult to perceive. Regular use of hearing aids and other listening devices assist hearing, however, they tend to offer only partial assistance (Manchaiah, Stephens, Zhao, & Kramer, 2012). For example, hearing aids also increase the volume of background noise and thus, the challenges in adequate receipt of talk remain. In this study we examine the interactional management of hearing problems by people with different grades of hearing-impairment. The specific focus is on conversational repair practices that are used to restore intersubjective understanding between the interlocutors when problems of speaking, hearing and understanding occur (Schegloff, Jefferson & Sacks, 1977; c.f. also Dingemanse et al., 2015). In particular, this study examines other-initiations of repair which emerge when a previous speaking turn has been difficult to hear or understand for the recipient of that turn. Individuals with hearing-impairment have several resources available to tackle the challenges in hearing. Additionally, the conversational partners use their own resources in a joint manner. Thus, the problems in conversation can be repaired with collaboration between the participants (Pajo, 2013a; Skelt 2006). This kind of other-initiated repair sequence forms a side sequence to the main line of conversation (Schegloff et al., 1977). In the following, a representation of a repair sequence is presented (A= conversational partner, B=a person with a hearing-impairment, c.f. Lind, Hickson & Erber, 2004).

1 A: Trouble source turn

2 B: Other-initiation of repair, e.g., 'what'

3 A: Repair turn, e.g., 'repetition of the trouble source turn'

4 B: Confirmation, e.g., 'yeah'

In the representation above, the turns 2 and 3 form the side sequence to the main line of conversation (other-initiation of repair and repair). For example, 'What?', or 'Huh?'-questions are other-initiations of repair, which initiate an open indication of trouble, that is, potentially the previous turn of talk was totally misperceived (Drew, 1997). An indication of trouble can also be produced with turns such as, 'beg y'pardon', 'no I didn't catch that', or 'don't mumble what' (Skelt, 2006: 254 and 313-314; Lind, 2009:230). In addition, a frown and leaning towards the speaker, or a 'freeze look' can work as a stand-alone other-initiation of repair (Manrique & Enfield 2015; Pajo & Klippi, 2013). All these actions from the recipient may indicate the need for repair because of misperception. However, recipient of talk utilizes other-initiations of repair also owing to troubles encountered, for example, in understanding, in appositeness, or in acceptability (Robinson, 2014). A response to these, the repair turn, is typically a repetition of the previous turn with emphasis on clarity (Lind et al., 2010). The need can also be targeted towards a certain part of the previous turn (Pajo, 2013b). For example, it is very typical that a name of a person or place is misperceived which results in a more specified other-initiation (e.g., 'Who?', 'Where?').

The side sequence of other-initiated repair is usually just two turns; the other-initiation and the repair turns. In addition, the recipient can confirm that the repair was successful with a minimal response (e.g., 'yeah') (Lind, Hickson, & Erber, 2004). Although the side sequence is typically quickly managed, other-initiation of repair halts the progress of conversation. In other words, the main conversation cannot proceed before the trouble is somehow resolved. In general, conversation is expected to continue, i.e., there is 'preference for progressivity' (Schegloff, 2006: 86). If the recipient is recurrently forced to interrupt the flow and progress of conversation and request for clarification, he or she may risk being seen as having altered cognition and their social identity is in jeopardy (Hétu, 1996). As a solution to this, an individual with hearing-impairment may abandon initiating repair altogether. This is problematic because if conversation then continues, based on partial hearing and guessing, the consequence may be misunderstandings and unexpected topic shifts (Skelt, 2012). Hearing-impairment can, therefore, result in a challenge to maintaining shared understanding, that is, intersubjectivity.

According to previous studies the most common types of other-initiations used by adults with hearing-impairment are open requests ('huh', 'what') and candidate understandings (Pajo, 2013b; Caissie & Gibson, 1997; Tye-Murray, Witt & Schum, 1995; Lind, Hickson & Erber, 2004). Less regularly, questioning repeats and specific questions are used (Caissie & Gibson, 1997; Tye-Murray, Witt & Schum, 1995; Pajo, 2013b). Previous studies have mainly examined other-initiations of repair in clinical or simulated conversations (e.g., Ekberg, Hickson & Grenness, 2017; Lind et al., 2004; Tye-Murray, et al., 2010). Other-initiations in everyday interactions of people with hearing-impairment have been studied less (see, however, Pajo, 2013a, b for other-initiations by individuals with severe hearing-impairment, and Laakso, Salmenlinna et al., 2019 for open-class other-initiations of repair by individuals with mild to moderate hearing-impairment).

This article contributes to the previous studies dealing with misperception and other-initiation of repair by people with hearing-impairment. In contrast to previous studies, the analysis presented in this paper will examine the impact of hearing-impairment as the grade of hearing deteriorates. First, observations concerning mild to moderate hearing-impairment are presented. Second, the analytic focus is shifted towards more severe and profound grades of hearing-impairment. The findings are discussed in relation to face threat and diminished social identity of the individuals with hearing-impairment. In addition, implications for counselling are suggested.

Materials and methods

The participants for this paper are originally from two data bases of videotaped everyday interactions of people with hearing-impairment in Finland. The data including ten participants with mild to moderate hearing-impairment (BEHL average of 0.5-4 kHz was 26-48 dB) is from the research project led by Author 2. All participants with hearing impairment were using hearing aids in the recordings made in the participants' everyday environments with their regular communication partners. The data were collected in the y. 2011-2014. The data including hearing-impairment from moderate to profound in the better ear (the average of 0.5-4 kHz was 48-90 dB) was from Author 1's PhD-study (2013a). The video data from home environment were collected in the y. 2007-2010. All five participants were using hearing aids.

In the analytic procedure, the qualitative method of conversation analysis (CA) was utilized. The CA method is based on a sequential analysis with the role of the analyst being to detect recurrent features in interaction and to reveal how they are negotiated turn-by-turn (Sidnell, 2010).

According to CA, conversation is orderly and systematic (Heritage & Atkinson, 1984).

Therefore, the participants' behavior is analyzed in detail. This detailed approach increases the reliability of the findings because the data are carefully transcribed according to CA-conventions to represent the original video data (Sidnell, 2010). The speech turns that are in the extracts are presented in two lines. The first line is the original Finnish utterance, and the second is the approximate English translation. The non-vocal aspects of the extracts are presented in capital letters (e.g. TURNS HIS EAR TOWARDS PIA). They are marked down in the transcript where relevant. The speaker's non-vocal actions are marked above the original Finnish utterance and the recipient's non-vocal actions below the English translation. The direction of gaze is also marked where relevant (see Appendix: Key to transcription conventions).

Results

Mild to moderate hearing-impairment: similarity in other-initiation of repair as compared to participants with normal hearing

In the current data, participants with mild to moderate hearing-impairment did not differ from their normally hearing conversational partners in the total amount of other-initiation of repair. In total, the participants with mild to moderate hearing-impairment made 73 other-initiations (of these 20 open requests such as *Mitä* 'what' and *häh* 'huh'), whereas their conversational partners made 81 (of these 17 open requests). Thus the individuals with mild to moderate hearing-impairment did not appear more engaged in dealing with the problems of hearing than their normally hearing partners. The side sequences of other-initiated repair were comprised of only two turns similarly as in conversations between normally hearing participants. The problems were thus immediately resolved after the speaker repeated their original utterance. The following conversational fragments show the similarities in other-initiated repair sequences by participants with normal hearing (Extract 1) and with hearing-impairment (Extract 2). In Extract 1, the repair sequence is initiated by the participant with normal hearing (line 03), and in Extract 2 by the

participant with hearing-impairment (line 02). Both use the interrogative *mitä* ‘what’ as an open initiation of repair.

Extract 1. *Other-initiation of repair by participant with normal hearing*

H001.2KO Home conversation. Rau=Rauli with moderate hearing-impairment; Wife=Rauli’s wife.

- 01Wife: Hanskil o usein ne tytöt hoidossa.
Hanski often takes care of the girls.
- 02Rau: niihän tuo haasto.
yeah he mentioned that.
- 03Wife: → mitäh?
what?
- 04Rau: niihän tuo sano.
yeah he said that.
- 05Wife: heh heh faijaaf heh
he he fI seef he
- 06 (6.0) WIFE DRINKS COFFEE
- 07Wife: onhan se hyvä että joku on °luvannu° (0.5) hoitaa.
well it is good that someone has °promised° (0.5) to take care.

Extract 2. *Other-initiation of repair by participant with hearing impairment*

H111.4KO Home conversation. Lii=Liisa with mild hearing-impairment, Hus=Liisa’s husband.

- 01Hus: mm, kiehuko pasta liikaa.
hm, did the pasta cook too much?
- 02Lii: → mitä?
what?
- 03Hus: onko liian kiehunutta.
is it overcooked.
- 04Lii: ei, just sopivaa.
no, just right.

As in everyday conversations generally, both in Extracts 1 and 2 the side sequence of other-initiated repair is only two turns; the other-initiation and the repair turns. In Extract 1 the other-initiation *mitäh* ‘what’ is produced by the normally hearing participant (line 03), after which Rauli, the participant with hearing-impairment, repairs by repeating his previous utterance *niihän tuo haasto* ‘yeah he mentioned that’ (line 02) in a slightly modified form *niihän tuo sano* ‘yeah he said that’ (line 04). In his repair turn Rauli replaces the past tense form of the verb *haastaa* (dialectal word for ‘talking’ or ‘chatting’; here appr. ‘mention’) with a past tense form of more

simple standard language verb *sanoa* ‘say’ and in doing so clarifies his comment. In Extract 2, Liisa, the participant with hearing-impairment, also produces an other-initiation with *mitä* ‘what’ (line 02). In the repair turn her husband repeats his original question *kiehuko pasta liikaa* ‘did the pasta cook too much’ (line 01) in a slightly modified form *onko liian kiehunutta* ‘is it overcooked’ (line 04).

In the database of ten participants with mild to moderate hearing-impairment, they and their conversational partners both other-initiated repair regularly in complex circumstances where there was background noise, multitasking, overlapping talk, or sudden topic shifts. In the following, there are examples of other-initiations of repair in these kinds of complex environments by both the participants with normal hearing (Extract 3) and hearing-impairment (Extract 4). In Extract 3 Lauri, a participant with mild hearing-impairment, is talking with his wife about their plans for the next days. The kettle is boiling and makes noise, and the wife with normal hearing initiates repair by explicitly commenting that she can’t hear (lines 10-11) what Lauri was saying in line 09.

Extract 3. *Other-initiation of repair by participant with normal hearing*

H052.6KO Home conversation. Lau=Lauri, a man with mild hearing-impairment; Wife=Lauri’s wife.

- 01Lau: mun on keskiviikkoiltana oltava tuol Vantaalla.
 I have to be at Vantaa on Wednesday night.
- 02 (2.0)
- 03Wife: kuorossa.
 in the choir.
- 04Lau: nii.
 yes.
- 05Wife: vai onks sulla se puheteatteri.
 or do you have the theatre (performance).
- 06Lau: e:i kun ei kun, just niinku sanoit.
 no I mean I mean just like you said.
- 07Wife: aijaa.
 oh I see.
- 08 (10 seconds; WATER KETTLE IS BOILING LOUDLY, LAURI IS BROWSING HIS IPAD)
- 09Lau: (---)
- 10Wife: → nyt mä en kuule, mä en kuule tänne nyt ku mä kaadan,
 I can’t hear you now, I can’t hear you here when I pour

→ toi kohisee toi vesi[keitin.
and that water kettle is roaring.

11Lau: [niin ku mä sanoin vaan että
yeah so I just said that

12 kun mä kuvittelin et mul on keskiviikkona näytös
I thought that I have a theatre performance on Wednesday

13 mut ei mulla olekkaa.
but I don't have.

The context of other-initiation is complex both linguistically and action-wise. Both Lauri and his wife are engaged in other activities while talking with each other. Lauri is browsing his iPad calendar at the dining-room table and his wife is in the kitchen making tea. The environment is thus a multitasking situation. Linguistic complexity comes from the fact that there have been two options of Lauri's future activities mentioned, choir and theatre, and it has not been clear which of the two activities Lauri will have on Wednesday night, although this seems to have been just resolved (lines 01-07). Furthermore, there is a lengthy pause while Lauri is browsing his iPad and the wife is pottering around the kitchen, before Lauri suddenly starts to talk, simultaneously as the water kettle is making noise (line 08-09). The wife has not been attending to Lauri, and she other-initiates repair explicitly by saying that she can't hear as the kettle is making noise (lines 10-11). Lauri's repair follows immediately and the hearing problem is resolved within these two turns of talk.

In Extract 4 both Lauri and his wife are sitting at the kitchen table. Lauri is looking at the newspaper for the TV program of the starting Olympic Games while they are chatting. Lauri's gaze is not focused on his wife. Lauri is rustling the newspaper and looking for the TV program in it, when the wife asks a question about the coffee maker. By doing so the wife suddenly shifts the topic from the TV program to her concern about whether the coffee maker had been switched off. Besides the topic shift, this context is also complex because of the background noise from the rustling of the newspaper, and because Lauri's gaze and attention is focused on the newspaper, not his wife. As a consequence, Lauri initiates repair in line 11.

Extract 4. *Other-initiation of repair by participant with hearing impairment*

H052.11KO Home conversation. Lau=Lauri, a man with mild hearing-impairment; Wife=Lauri's wife.

01Lau: luulishan se täältä nyt näkyvän, (-) näiltä sivuilta,
one would think you can find it, (-) from these pages,

02 (.) rahapelit, keno.
 (.) **betting games, keno.**

03Wife: urheilusivuilta.
from the sports pages.

04Lau: mm, (1.5) sovoo- hmm, (2.0)televisio.
hm, (1.5) sovoo- hm, (2.0) television.
 LAU: LOOKS FOR PROGRAM INFO IN THE NEWSPAPER

05 (1.0)NEWSPAPER RUSTLES

06Lau: ää, yyh,
eh, uuh,
 LAU: LOOKS FOR PROGRAM INFO IN THE NEWSPAPER

07 (2.5)LAURI TURNS PAGES, NEWSPAPER RUSTLES

08Wife: na[psasitsä pois ton keittimen.
did you switch off the (coffee) maker.
 WIFE: POINTS AT THE COFFEE MAKER

09Lau: [ei tää, tää on niin,
not this, this is so,
 LAU: HANDLES NEWSPAPER, PAPER RUSTLES

10 (0.2)LAURI'S HANDS HALT AND HE STOPS SCANNING NEWSPAPER

LAURI'S GAZE: _____

11Lau: → mitä?
what?

12Wife: napsasitko pois ton kahvinkeittimen.
did you switch off that coffee maker.

13Lau: no empä tietenkää.
well of course I didn't.

14 (1.0)

15Lau: käy nappaamassa pois [mä katon sil ai- koitan
go and switch it off [in the meanti- I'll try

16Wife: [joo,
yes,

17Lau: sil[lä aikaa löytää sen.
in the meantime I'll try to find it.

18Wife: [joo,
yes,

After the wife has asked the question about the coffee maker (line 08), Lauri first sticks to his on-going activity and keeps on searching for the TV program (line 09). Then, after a short pause, he halts his hand movements, stops scanning the newspaper, and asks *mitä* 'what' as if just

realizing that his wife had said something (lines 10-11). Lauri's halting and frozen position before repair initiation may represent embodied orientation to the need to repair and to re-establish progressivity in interaction. In this respect Lauri's repair initiation in Extract 4 is different from his wife's statement that she can't hear in Extract 3: whereas the wife is fully aware of her hearing problems, Lauri does not immediately react to them but initiates repair with a slight delay. However, topic shifts are contexts where other-initiations regularly emerge in ordinary everyday conversations as they are not semantically connected to previous talk (Drew, 1997). In both cases, increased background noise also appears to contribute to the mishearing and subsequent need for repair. In these respects Extract 4 does not differ from the conversations of normally hearing participants. In Extract 4 the problem is also solved with the repeat of the original turn and the side sequence of other-initiated repair consists of only two turns as is typical in conversations involving participants with normal hearing.

To sum up, in the everyday conversation data base from ten participants with mild to moderate hearing-impairment using hearing aids, there were no clear differences in the frequency of other-initiations of repair between the hearing aid users and their normally hearing co-participants. Also the environments where other-initiations emerged were similarly complex with e.g. background noise or sudden topic shifts by both participants with hearing impairment and their normally hearing co-participants. The participants did not engage in other-initiated repair very often and problems were solved in only two turns. Furthermore, other-initiations of repair were not accompanied by body movements that occur in conversations involving participants with more severe hearing problems, as can be seen in our later analyses of changing other-initiation of repair patterns related to the severity of hearing impairment. Thus hearing problems and other-initiation of repair were not a central activity in the interactions of participants with mild to moderate hearing impairment using hearing aids. As in conversation generally, the progressivity in interaction and the intersubjective understanding between the participants was easily secured.

Changes in patterns related to the severity of hearing-impairment

In the current data, individuals with severe hearing-impairment produced more other-initiations of repair than their normally hearing co-participants. The frequency for individuals with hearing-impairment was 164 verbal other-initiations of repair, while for partners the corresponding

number was 45. In addition, only the individuals with hearing-impairment produced embodied indications of trouble without any verbal utterance. The frequency of these actions is difficult to quantify, because they form slightly different combinations (see Pajo & Klippi, 2013).

The overall management of repair sequences adjusted to the deterioration of hearing. These adjustments from conversations between individuals with severe hearing-impairment and their normally hearing conversational partners include embodied indication of trouble as other-initiation of repair, repair in the occasion of projected trouble, and the management of prolonged repair sequences. In the following, these adjustments are analyzed.

Embodied actions used to request repair

Face-to-face conversation allows embodied and non-vocal indications of trouble, for example shifts in facial expressions (Skelt, 2006; Lilja, 2010; Seo & Koshik, 2010). The recipient of these actions can, in turn, take them into account (Bavelas et.al., 2002; Goodwin, 1981). Thus, these collaborative sequences are possible in any face-to-face conversation. However, their recurrent and emphasized occurrence in conversations with an individual with hearing-impairment supports their connection to the recipient's hearing-impairment (Pajo, 2012). These embodied displays of trouble are a reminder for the conversational partner of the recipient's difficulties to perceive speech. This can result the conversational partner's ongoing use of gaze ("high-gazing" conversational partners, see Skelt, 2006:320). The following Extracts 5 and 6 demonstrate the use of embodied other-initiations of repair.

Extract 5. Goals. Ker=a woman with severe hearing-impairment, Sir=her friend (Pajo, 2013a:20).

01Sir: Ja se on kiva kun on jotain hommaa suunnitelmissa ja

And its nice when one has stuff planned and

02 tavoi- (.)tavoittei____[ta?

goa- goals

KER: ▲LEANS TOWARDS SIR

KER: ▼ LEANS AWAY FROM SIR

03Ker: [NII;

yeah

Extract 6. Young. Aki=a man with a severe hearing-impairment, Pia=his girlfriend (Pajo: 2013a:20).

01Pia: Siis mun mielest se on vähä silleen et niinku aattelee

Like I think it is kind of so that like think

AKI: DRAWS WITH A PENCIL ON A PAPER

PIA: ▼ TURNS HER FACE TOWARDS AKI, A PROMINENT
NOD

PIA'S GAZE: ...[X_____

02Pia: semmosta että (.) n'on nuoria? (0.9) ↑nuoria?

that kind of that they're young young

AKI'S GAZE: ..._____

AKI: ▲ TURNS HIS EAR

TOWARDS PIA, THE DRAWING CEASES

AKI: ▼ LEANS AWAY FROM PIA

03Aki: Nii;

Yeah

In both of the Extracts (5 and 6) above the speaker halts her talk in lines 02 in the immediate vicinity of the indication of trouble by the recipient with hearing-impairment. In Extract 5 Kerttu leans towards Sirkka and in Extract 6 Aki shifts his gaze and turns his ear (with a hearing aid) towards Pia. The turn continuation is a repetition of the word, which is under production (Extract 5) or, which was just uttered (Extract 6). Both Kerttu and Aki are seen to utter the *nii* 'yeah' confirmation after the repetition. Furthermore, they both lean away from the speaker to straighten their posture as an indication of the trouble having been resolved.

In addition, Extract 6 demonstrates how mutual gaze between Aki and Pia is achieved. It allows Pia to offer Aki extra visual support with a prominent nod. In Extract 5, mutual gaze is ongoing throughout. Face-to-face access is crucial in conversations with individuals with severe hearing-impairment. It makes lipreading possible and therefore, supports the adequate receipt of talk.

It is noteworthy to highlight that Extracts 5 and 6 demonstrate collaborative repair, which occurs quickly during an ongoing utterance. Therefore, the main line of conversation is minimally disrupted in comparison to verbal other-initiations of repair. This type of evidence suggests that, for example, by leaning towards the speaker, Kerttu is sharing her uncertainty with a minimal attention to the hearing- impairment. Thus, emphasized embodied actions are a face-saving way without overtly disrupting the progress, the flow of conversation. They work at least between familiar conversational partners who have knowledge of the difficulties that are entailed in hearing.

Repair without explicit indication of trouble

Individuals with hearing-impairment may not explicate their need for repair because at least in severe hearing-impairments the need is recurrent. In other words, the threat to the conversational flow is always present. Familiar conversational partners can adapt to this threat by increasing their responsibility for mutual understanding by monitoring adequate sequentially implicated responses from the individual with hearing-impairment. In the next Extracts (7 and 8) the conversational partner increases her responsibility for the conversational flow even when the individual with hearing-impairment is not indicating explicit trouble.

Extract 7. Tuula. Aki=a man with severe hearing-impairment, Pia=his girlfriend (Pajo & Klippi, 2013:172).

PIA'S GAZE: _____
01Pia: Ja sitte Tuula on lähdössä huomen[na Tallinnaan,
And then Tuula is leaving tomorrow for Tallinn

AKI'S GAZE: TOWARDS A BEER CAN

02Aki: [°>Just<°
Right

PIA'S GAZE: _____

03 (1.5)

AKI'S GAZE: ...[x____

04Pia: Kuulit sä,
Did you hear

05 (0.8)

PIA: ▼LEANS TOWARDS AKI ▼ NODS

06Pia: Tuu[la <Tuula on lähdössä huomenna Tallinnaan>,
Tuula Tuula is leaving tomorrow for Tallinn

AKI: ▲TURNS HIS EAR TOWARDS PIA

07Aki: [Eh.
Nope

Pia asks *kuulit sä* 'did you hear' (line 04) and thus, she is displaying an orientation to Aki's hearing. This orientation can be interpreted as confrontation, because Pia has just initiated a new topic and she monitors Aki by keeping her gaze towards him. Therefore, Pia can see that Aki is not looking at her, instead his gaze is towards a beer can. In addition, the timing of Aki's softly spoken minimal response *just 'right'* (line 02) is not in line with the essential part of Pia's talk. In other words, Pia can see that Aki is not paying attention and she produces a repetition (line 06). These two actions, confronting Aki on his hearing and producing repetition even if not requested, demonstrate taking responsibility for the conversational flow. Pia is right, Aki has not heard and admits his misperception (*eh*, 'nope').

Extract 8. Wind. Ker=a woman with severe hearing-impairment, Sir=her friend (Pajo & Klippi, 2013:173).

PIR: ▼BEGINS TO MOVE HER HANDS

05Pir: Nii ja sit jos tulee tuuli;

Yeah and then if comes the wind

KER: ▲FROWNS, LEANS TOWARDS PIR

KER: NODS

06Ker: Nii;

Yeah

PIR: ▼I ICONIC HAND GESTURE ▼II ICONIC HAND GESTURE

07Pir: TUULI j:a pöllyttää niitä.

The wind

and whirls them

KER: NODS

08Ker: **Mm.**

Similarly to the previous Extract 7, Sirkka disregards Kerttu's *nii* 'yeah' minimal response, which indicates adequate receipt of talk. Instead, Sirkka repeats the word *tuuli* 'wind' and increases her volume. Furthermore, Sirkka moves both her hands from her lap and supports her talk by animated, iconic hand gestures while she continues her turn. This conversational fragment differs from the previous (Extract 7), because Kerttu has also indicated trouble by frowning and leaning (line 05) towards Sirkka just before the 'go ahead'-type of minimal response (*nii*, 'yeah').

Therefore, in some sense Sirkka has received mixed messages from Kerttu. Sirkka then chooses to increase responsibility for the conversational flow by embedding the repetition of a word in the multimodal continuation of her turn.

Both Pia and Sirkka are examples of conversational partners who have experience of hearing-impairment. They can be very sensitive in their responses and exceed their recipient designs towards increased responsibility and even controlling behavior. In other words, these conversational partners can choose to ensure that their talk was perceived even if the recipient is not actively initiating repair, or if she or he is sending mixed messages. Thus, the conversational partners adjust their management of repair, which affects the overall dynamics of interaction.

However, overt verbal utterances, such as, *kuulit sä* 'did you hear', occurred only twice in the data and only with individuals with severe hearing-impairment.

Prolonged repair sequences

Orientation towards hearing-impairment is obvious, when one other-initiation of repair and repetition of the previous turn is not enough, but several turns of talk are needed in order to reach adequate receipt of talk (Pajo, 2012; Svennevig, 2008). This study included 14 prolonged repair sequences and they all occurred with individuals with severe hearing-impairment. In Extracts 9 and 10 the joint management of repair intensifies as the repair sequence prolongs. First, the Extract 9 demonstrates how the individual with hearing-impairment uses interjected timing in both of the other-initiations of repair (Lind et al., 2006). Thus, similarly to the embodied indications of trouble seen before (Extracts 7 and 8), also verbal other-initiations of repair can be produced while the conversational partner is still talking.

Extract 9. German. Ker=a woman with severe hearing-impairment, Sir=her friend (Pajo, 2013a:23).

04Sir: Oisko se saksalainen se y[ks;

Could it be German it one

KER: LEANS TOWARDS SIRKKA

05Ker: [>Mitä<?

What

06Sir: Oisko se SAksalainen se yks

Could it be German it one

KER: ▲ FROWNS AND REMAINS IN THE LEANING POSTURE

07 ku Saksastahan °niitä tul[ee aika (-)°

when from Germany those come quite

KER: ▼ LEANS MORE TOWARDS SIRKKA

08Ker: [>Ny mä e kuullu<,

Now I didn't hear

09 (0.2)

SIR: LEANS TOWARDS KERTTU

10Sir: PENSasmustikkaa tulee SAksastaki aika paljo?

Blueberry shrubs come from Germany quite a lot

11 0.2)

KER: LEANS AWAY FROM SIR AND NODS

12Ker: JOO.

Yes

SIR: LEANS AWAY FROM KER

On lines 05 and 08 Kerttu produces first *mitä* ‘what’ and then *ny mä en kuullu* ‘now I didn’t hear’. Kerttu also produces embodied indications of trouble, for example, shifts her facial expression to a frown (line 06). These actions, altogether, reveal a rather deep misperception. Lind *et al.* (2006) have demonstrated that by interjecting the other-initiation of a repair to the immediate vicinity of the trouble source, the recipient with hearing-impairment adds some targeting force into the action. However, because of the clear disruptiveness of this action, this urgent way of requesting clarification may be specifically used with familiar conversational partners.

In the following Extract 10, the recipient with the hearing-impairment produces three verbal other-initiations of repair. Moreover, the conversational partner increases her actions towards conversational flow in a joint manner.

Extract 10. Nuuksio. Mat=a man with severe hearing-impairment, Mai=his wife (Pajo, 2012:236).

01Mai: =En tiedä onko ne ollu *fsielä*;
I don't know have they been there

02 (0.8)

MAT: LIFTS EYEBROWS, POKES HIS HEAD TOWARDS MAI

03Mat: >Tä?<
Huh

MAI: ▼LIFTS HER JAW ▼SETS HER JAW DOWN

04Mai: <ONKO NE OLLEET siellä Nuuksion;>
Have they been there Nuuksio's

05 (1.0)

MAT: ▼FROWNS

06Mat: On-,
(-)

07 (0.2)

MAI: ▼LIFTS HER JAW ▼SETS HER JAW DOWN

08Mai: <Onko ne olleet siellä Nuuksiossa.>

Have they been there at Nuuksio

09 (0.3)

10Mat: Nuuksiossa;
At Nuuksio

MAI: ▼ NODDING ▼ A HEAD SHAKE

11Mai: Nii=et <onko ne olleet tänää>= en tiedä;
Yeah that have they been today (I) don't know

MAT: ▼NODS

12Mat: Vois soittaa ja kysyä
(We) could give a call and ask

Matti indicates trouble by producing *tä*, 'huh', *on-* (targeting possibly the question word *onko*, 'be'), and *Nuuksiossa* 'in Nuuksio', on lines 03, 06, and 10. Thus, Maija, his wife, produces repetitive clarification during three turns (lines 04, 08, and 11) before Matti is able to continue the main line of conversation (line 12). Even if the conversation is put on halt for a longer period of time, Matti shows creativity in his other-initiation of repair. He starts with an open other-initiation *tä*, 'huh', indicating a complete misperception. He then moves on to a more targeting action *on-*, which is a repetition of the previous turn. It can be interpreted that Matti shows effort, because he does not use the same open type of other-initiation of repair (*tä*, 'huh') but changes it every time to a more targeting one (see Svennevig, 2008). However, after indicating a total misperception (*tä*, 'huh') Matti is still quite far from perceiving Maija's talk (*on-*). This way Maija can see that Matti is having overt problems to adequately receipt talk. Finally, Matti produces a keyword *Nuuksiossa* 'in Nuuksio'. Overall, Matti's orientation is in actively joining in the management of repair with his wife Maija. Maija also quickly adjusts her turn production according to Matti's needs. Similar actions towards conversational flow are visible in the previous Extract 9 with Kerttu's friend Sirkka. Typically, conversational partners slow down their speech production, stress individual words, and possibly increase speech volume (Lind et al., 2010). They also intensify the face-to-face contact by mirroring the leaning posture (Extract 9) and making their face more prominently available (e.g. by lifting jaw, Extract 10).

Discussion

The management of problems in hearing in everyday conversations is a common occurrence to all of us. However, individuals with hearing-impairment have a high risk of encountering such problems in a recurrent manner. With more severe grades of hearing-impairment, this risk increases.

In the current data, individuals with a mild to moderate hearing-impairment using hearing aids do not differ from their normally hearing conversational partners in the total amount of other-initiation of repair. Furthermore, in the mild to moderate data, other-initiated repair sequences were regularly short consisting of only two turns, that is, other-initiation of repair is followed by a repair turn, and after that the main line of conversation is continued. Therefore, for individuals with mild to moderate hearing-impairment, hearing aids were seen to amend the loss in hearing and offer substantial support. These results are in line with the study by Laakso et al. (2019) who did not find differences in the frequency of use of open requests (i.e., 'what, huh'-type of other-initiations of repair) between normally hearing participants and individuals with mild to moderate hearing-impairment using hearing aids. The positive findings on the effect of using hearing aids in everyday interactions by individuals with mild to moderate hearing impairment also point out how hearing aids enable functioning in everyday activities and support participation in conversations with regular communication partners. Similar improvements in participation related to hearing aid use by older individuals with mild hearing impairment have been found using self-reported outcome measures, although there are also contradictory findings (for a review, see Timmer, Hickson & Launer, 2015).

However, for individuals with more severe hearing-impairments the challenges in interaction persist despite using hearing aids. In the current data, the frequency of other-initiation production was increased as hearing deteriorated. Therefore, the normally very effective side sequence of repair becomes socially challenging. Issues, such as lack of competence and handicapping disability, can be associated with a recurrent use of other-initiations of repair (Pajo, 2012; Scarinci et al., 2008; Skelt, 2012). In other words, the individual with a severe hearing-impairment is at risk of being embarrassed. To avoid this, the individual with a severe hearing-impairment can sometimes choose to pretend to hear by responding with minimal 'right, yeah, etc.'-responses, or ignoring talk altogether (see also Skelt, 2012). These actions can be a way to pursue the progressivity of conversation without disrupting it with yet another other-initiation of

repair. Therefore, a constant tension between maintaining face and maintaining progressivity is present.

Nevertheless, when exploring mundane interactions between individuals with severe hearing-impairment and their conversational partners the repair sequence that follows is typically effectively managed. The extracts in this paper show that the interactants have a great deal of competence to resolve problems. However, the familiarity between the participants needs to be highlighted. The familiarity most likely has an effect on the intense monitoring and sensitive responses, because both participants know of the difficulties that are entailed in hearing.

This study has collected several recurrent features from the repair sequences. Firstly, in face-to-face contact, visual indications of trouble and monitoring for these indications, are strongly present. In other words, the interactants work in an intense, joint manner (see also Skelt, 2012).

They do collaborative, even pre-emptive, repair, which occurs quickly during an ongoing utterance. In this study, only the individuals with severe hearing-impairment used visual indications of trouble. The reason for this can be in the fact that verbal other-initiations of repair sequences are common and the overt presence of misperception is recurrent. Therefore, visual resources are possibly evidence of interactional sensitivity (Pajo & Klippi, 2013). Secondly, the interactional partner can take more responsibility by making explicitly sure that the talk was heard. Thus, even if the individual with hearing-impairment is not clearly using other-initiation to indicate trouble, the conversational partners may offer repair. Thirdly, collaboration between the interactants is shown in prolonged repair sequences. In these sequences, the depth of misperception is quite visible. However, the individuals with hearing-impairment have several tools, which assist in targeting the problematic part of the previous turn. For example, interjecting the other-initiation of repair while the conversational partner is still talking, targets the problem to the immediate vicinity of the misperception. This practice has also been observed by Lind and co-workers (2006). Furthermore, linguistically more targeted other-initiations of repair reveal more precisely how much of the previous turn is misperceived. Prolonged repair sequences reveal the interactional pattern used by the conversational partners. For example, partners with normal hearing intensify the face-to-face contact by leaning towards the individual with the hearing-impairment and one resource to clarify their talk is by slowing down the speech rate (see also Lind et al., 2010).

Prolonged repair sequences can damage the quality of interaction as they force the participants into questioner – answerer -roles. The individual with hearing-impairment is frequently producing other-initiations of repair and the conversational partner is answering. Being unable to secure the conversational flow is frustrating and embarrassing (Scarinci et al., 2008). Therefore, a memory of such incidences can have a long term effect, that is, even a threat of troublesome situations can increase sensitivity (Skelt, 2012). Thus, there is a risk for asymmetry between the individual with hearing-impairment and their conversational partner, when the conversation is threatened by these simplified roles.

When exploring other-initiations of repair, we can identify what makes them possibly face threatening and why they diminish the social identity of the individuals with hearing-impairment. Similar findings are convergent across different communication disorders, such as aphasia (e.g. Laakso, 2015). This information is needed to develop counselling in a clinical setting (see also Lind, 2009; Lind, 2010). The findings from this study suggest that basis for counselling is in how the main principle in conversation, progressivity, is achieved and maintained in different grades of hearing-impairment. For individuals with a mild to moderate hearing-impairment, the disability becomes overt, for example, in noisy environments or multitasking situations. These common everyday situations, even if quite easily managed, can pose a threat of losing progressivity. For individuals with a severe hearing-impairment, the disability is recurrently overt and the threat becomes reality in many everyday situations. The counselling, for both of these groups depending on the individualized need, could include more systematic approach in assisting these individuals to acknowledge the teamwork and the value of engaging in a conversation (see also Pajo, 2012). In other words, the aim is to increase interactional fluency between the individual with the hearing-impairment and the conversational partner. The basis, of course, is in motivating hearing aid use. Our study suggests that for people with mild to moderate hearing impairments hearing aid use enables similar efficient use of other-initiations of repair as by people with normal hearing. Thus the early use of hearing aid can be seen very important. However, the expectations towards hearing aids and other technical support can be too high, especially when hearing continues to deteriorate. Therefore, audiological rehabilitation in general should keep in mind interactional resources and counselling. One crucial point is the face-to-face contact (see also Ekberg et.al., 2017). Both conversational partners gain from mutual gaze. It allows, for example, embodied displays of misperception by the individual with hearing-

impairment. These embodied actions are advantageous because they are minimally disruptive. For example, overlapping talk is avoided and it does not initiate a sequence of turns (like a verbal other-initiation of repair). Similarly, the conversational partner can be more alert to produce repair in intensified face-to-face contact. The misperception can potentially be quickly managed and the main line of conversation can continue. In order to achieve this, the counselling should include examples from everyday conversations. These examples, such as in this study, can offer valid ideas for clinical professionals. This is important, because the social sensitivity of repair needs to be acknowledged and suggestions for conversational change acceptable in real-life environment. The findings in this study would be interesting to study further by using comparative analyses of the impact of different kinds of communication impairments, which are related to aging (e.g. cognitive impairment). Such comparison could reveal whether and how the social-interactive repair organization adapts to deficits in different features due to aging.

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Appendix

Key to transcription conventions:

Non-vocal behaviour: ▼ TURNS HER FACE TOWARDS AKI, A PROMINENT NOD
GAZE : ... [x _____

Original Finnish talk: ↑nu_oria?

Translation into English: **young**

Facial expression and body/head movement by a speaker are indicated by capital letters above the turn lines

A recipients actions during a speaker's turn are indicated by capital letters below the turn lines

The use of gaze:

Gaze shift towards the other participant without mutual gaze ... ____

Steady gaze ____

Point where mutual gaze is achieved ... [x ____

Gaze shift away ,,

Pauses are reported in brackets in seconds (0.4) and a micro pause is indicated by a (.), which is less than (0.2)

Overlapped speech is indicated by square brackets []

Falling intonation is indicated by a (full stop).

Rising intonation is indicated by ? or a clear rise in pitch by ↑

Level intonation is indicated by ,

Accentuation is indicated by underlining

Fast speech occurs between > <

Slow speech occurs between < >

Soft voice is indicated by °degree symbols around the relevant words°

Smile is indicated by ☺pound symbols around the relevant words☺

Cut offs are indicated by a dash, for example: on-

Adjacent utterances without a pause between them are indicated by =

An unclear part of an utterance is indicated by (-)

An audible inhalation is indicated by .h (full stop + h, the more hs the longer the inhalation)

A word spoken with inhalation is indicated by full stop before the word for example: .ei

Words uttered together are indicated by +

Creaky voice quality is indicated by #

A missing sound is indicated by '

Lengthening of a sound is indicated by :

A word produced with laughter is indicated by (h) for example: jot(h)ai