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Social Interaction

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Other-initiations of repair in Norwegian Sign Language

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Abstract

During the last five decades, a substantial amount of research has been conducted into conversational repair (Schegloff, Jefferson, & Sacks, 1977), and especially other-initiation of repair (OIR). A vast part of the research has been on spoken English, without considering or having access to embodied practices. Through a series of examples, this explorative paper provides a brief overview of formats and subtypes of other-initiation of self-repair employed in Norwegian Sign Language (NTS[i]). Special attention is given to the implicit open-class repair-initiation "freeze-look", as identified by Manrique (2016), Manrique and Enfield (2015), and Manrique, Enfield, Levinson, Crasborn, and Floyd (2017) in Argentine Sign Language, and to the subtype of restricted repair-initiations categorized as candidate offers. The data has been extracted from a corpus of informal multi-person conversations among deaf adult co-workers, recorded at their workplaces.

The results show a high degree of overlap with formats found in spoken languages, but also highlight features that seem to be unique to signed languages and the visual mode of communication. The examples presented take the form of summaries, transcriptions, uncensored video clips, and series of stills.

Keywords
Norwegian Sign Language, conversation analysis, other-initiation of repair, freeze-look, multimodal interaction, signed communication, face-to-face interaction.

1. Introduction

Research on conversational repair (Schegloff et al., 1977), or how humans deal with troubles of production, perception and understanding in communication, provides insight into crucial aspects of communicative competence (Hymes, 1972) or "interactional competence" (Salaberry & Silvia, 2019; Young, 2014) and is seen as an interface between interaction and cognition (Albert & de Ruiter, 2018). Repair can be initiated by the self or another, and accomplished by the self or another. This paper focuses on repair that is initiated by others but accomplished by the speakers themselves. The canonical structure of a sequence with other-initiation of self-repair (OIR-sequence) consists of a trouble-source, a repair-initiation, and a self-repair. Since Jefferson's "Side sequences" (1972) and the seminal work of Schegloff et al. (1977), a number of different terminologies and abbreviations for the different parts of the OIR-sequence have been suggested. This paper uses the terminology shown in Figure 1:

1.	D:	Wul did'e ever get married r' anything	Trouble-source
2.	C: →	Hu:h?	Repair-initiation
3.	D:	Did jee ever get married ?	Self-repair
4.	C:	I have // no idea	Restored progressivity

Figure 1 CD: SP (original unique identifier) from Schegloff et al. (1977, p. 367)*. I have added the line numbers to the left and the terminology in the right-hand column.*

Repair-initiations come in various formats, often ranging from referentially "weak" to "strong" (Schegloff et al., 1977, p. 369) based on their ability to frame or present what was problematic in the trouble-source turn (Dingemanse, Blythe, & Dirksmeyer, 2014; Jefferson, 1972). Open-class repair-initiations (OCRIs) (Drew, 1997), like "Huh?" or "What?", and implicit repair-initiations like the freeze-look repair-initiation found in Argentine Sign Language (LSA) (Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017) and in Swiss German Sign Language (Girard-Groeber, 2020) are at the weak end of the scale. More restricted formats, like requests including content question words, sometimes accompanied by (partial) repeats of the trouble-source turn, are towards the strong end. Repair-initiations that offer candidate understanding ("You mean X?") are found at the strongest or most restricted end (Manrique & Enfield, 2015; Schegloff et al., 1977). The scale of referential strength can be seen as a continuum (Kitzinger, 2013; Manrique & Enfield, 2015) on which there is no one-to-one correlation

between design and strength. An interjection-formatted “Huh?”, produced directly adjacent to the other’s production of an expression, can position that very expression as problematic, while an unmarked, verbatim other-repeat targets the whole trouble-source turn as repairable (Robinson & Kevoe-Feldman, 2010). In the NTS data, all repair-initiations containing other-repeats were found to be restricted. In accordance with Dingemanse, Kendrick, and Enfield (2016), all manual and non-manual repair-initiations that do not explicitly target any specific part of the trouble-source are treated as OCRIs.

Signed languages are full-fledged languages (see e.g. Kendon, 2008; Stokoe, 1960) and share several grammatical features with other (also spoken) languages. Signers make use of manual signs and non-manual markers (e.g. facial expressions, mouth gestures and other bodily behavior) to form utterances and perform communicative actions equivalent to those performed in spoken languages.

This study contributes to building knowledge about interactional aspects of Norwegian Sign Language (NTS), and possibly other signed languages. It also contributes to OIR-research in general by expanding the number of languages and practices investigated for multilingual comparisons, and by focusing on embodied practices (Girard-Groeber, 2014, 2018, 2020; Hazel & Mortensen, 2014; Heath & Luff, 2012; Mondada, 2011, 2018, 2019; Mortensen, 2016; Oloff, 2018; Seo & Koshik, 2010; Sikveland & Ogden, 2012). This is a growing field of research that deserves more attention in both signed and spoken languages.

OIR in NTS has not yet been properly investigated. This is also the case for most signed languages, with the exception of Manrique’s studies of LSA (Floyd, Manrique, Rossi, & Torreira, 2015; Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017). As part of a larger study of OIR in NTS, this paper provides an overview of different formats and subtypes of repair-initiations in an NTS multi-person conversational corpus.

2. Data

The data in this study consists of six ten-minute extracts from six different video recordings of multi-person conversations. The informants were 16 NTS-signing adult deaf co-workers, comprising 11 men and five women aged between 18 and 52 (average 39). They were recorded in groups of three to six persons in 2018 and 2019.

The data can be considered naturalistic (Lynch, 2002; Speer, 2002), as the informants were recorded during a break in their working day. They were not given any instructions on what to discuss, and no other persons were present during the recordings. The 60 minutes of data were analyzed by repeated watching, annotation, and transcription. I am a second language user of NTS, and a first-language consultant was called in to co-analyze parts of the data. An initial 133 candidate cases of OIR were extracted. These were reduced to a core selection of 112 by applying the “next-turn proof procedure” (Dingemanse et al., 2015; Hutchby & Wooffitt, 1998; Moerman & Sacks, 2011; Reber, 2012; Sacks, Schegloff, & Jefferson, 1978; Sidnell & Stivers, 2012). This procedure excludes cases in which utterances with the characteristics of repair-initiations are not

treated as such by the other interlocutor(s). For example, “What?” can be treated as a question-formatted news-receipt (Dingemanse, 2015; Dingemanse et al., 2016; Schegloff, 1997), a pursuit of response (Bolden, Mandelbaum, & Wilkinson, 2012; Pomerantz, 1985), a non-serious action (Schegloff, 1997), etc., and hence not be followed by self-repair. Such cases were excluded from the core selection, as were potential cases of repair-initiation to which there was no response at all (ignored or not seen).

2.1 TRANSCRIBING AND PRESENTING THE DATA

Detailed transcription of interaction is an important and often revealing process (Heath, Luff, & Jon, 2010; Hjulstad, 2017; Ochs, 1979). The transcriptions presented here are designed in a minimalistic manner intended to enhance readability. The examples are accompanied by subtitled video-extracts or stills from the video files. The transcriptions are multilinear (Hepburn & Bolden, 2012) and follow the basic structure of conversation analysis (CA) transcription (Jefferson, 2004) widely employed in CA (Sacks, Jefferson, & Schegloff, 1995; Schegloff, 1987, 2007; Sidnell & Stivers, 2012). They consist of three lines. The first line contains a line number, pseudonym and gaze direction. On the second line, signs are glossed with English words in their uninflected form, using uppercase. Non-linguistic behavior is also described here (in brackets). The third line consists of a translation into English. All sessions were recorded from two angles. However, for the sake of clarity and due to video quality, data from only one camera will be shown when that is considered sufficient. All video extracts are available in both full-speed and half-speed versions and are subtitled with English translations.

All names are pseudonyms, starting with A from the left (e.g. Abe, Ben, Carl etc.). Some informants appear in two recordings with the same pseudonym, in which case the alphabetical order cannot be upheld. Lines on a grey background show simultaneous events. Each transcription is accompanied by a short “summary” consisting of only the translations. The repair-initiations are marked with arrows to provide an easily accessible overview of the extract. A more detailed overview of transcription conventions is included at the end of the paper.

3. Formats for initiating repair in the NTS data

The following section presents an overview of different formats and subtypes of repair-initiation in NTS, with transcribed examples, along with video clips and stills, retrieved from the data. This form of presentation is inspired by the special issue of *Open Linguistics* (2015/2016) that examines OIR in ten languages. I have used the cross-linguistic coding scheme suggested by Dingemanse et al. (2016), and added extra coding categories that have been adapted for signed languages.[ii] We start with open-class repair-initiations (OCRIs), including the subtypes non-manual OCRIs, question word OCRIs, and formulaic and implicit freeze-look repair-initiations. We then move on to restricted formats of repair-initiation and present two subtypes – namely requests for specifications and candidate offers – that call for (dis)confirmation. Table 1 then

presents the quantitative distribution of the different formats and their subtypes. The final section consists of concluding remarks.

3.1 OPEN-CLASS REPAIR-INITIATIONS

In the NTS data, 35% of the other-initiations of repair are OCRIs. OCRIs do not point out what element is problematic in the trouble-source utterance, other than through temporal adjacency. OCRIs do not necessarily reveal whether the trouble is related to perception or to understanding. In the NTS data, there is only one example (1%) of the manual sign *HVA* ("what"). In other languages, the percentage of this subtype of OCRIs has been found to be between 1% and 11% (Blythe, 2015; Enfield, 2015; Gisladottir, 2015; Kendrick, 2015; Manrique, 2016; Rossi, 2015).

In signed languages (as in spoken interaction), repair-initiations can also be produced solely by means of embodied resources (Mondada, 2011, 2018, 2019), e.g. facial actions, head/upper body movements and combinations thereof. The NTS data also includes mouth gestures (Boyes Braem & Sutton-Spence, 2001), such as the raising of the upper lip, or mouthings (Boyes Braem & Sutton-Spence, 2001), such as miming the pronunciation of a v-sound or mouthing *hva* [va] ("what" in spoken/written Norwegian), often combined with frowning, raising/lowering of eyebrows, head poking forward, upward nods, etc. These non-manual OCRIs can be compared to the English "Huh?" (Manrique et al., 2017) and constitute 9% of the repair-initiations in the NTS data. In Extract 1, Abe and Carl have just agreed upon how much Abe must pay for some presents for a Christmas party. At first, Abe assumed it was NOK 400, but it turned out to be only 200. Finn, smiling, summons Abe and suggests that Abe is relieved that he only has to pay 200. The extract shows Abe producing a non-manual OCRI that targets Finn's utterance by squinting and mouthing the Norwegian word *hva* ("what"):

Video 1: Full-speed video of extract 1, subtitled in English

Video 2: Half-speed video of extract 1, subtitled in English

Extract 1: Non-manual repair initiation (lowering eyebrows, squint and mouthing "what")

1.	Finn		Hey. You're relieved you only l… pay 200, that's good.
2.	Abe	→	Huh?
3.	Finn		You can take a bank loan of 200 and send him.
4.	Abe		(withdraws gaze)

```
1. Finn     Gaze: Abe-----------------------------
            Sign: (Puts down food,smiling)HEY HEY RELIEF 200 L* PAY GOOD
            Trns: Hey. You're relieved you only l… pay 200, that's good.

2. Abe      Gaze: Finn----------------------------
          → Sign: (Lowers eyebrows, squints, oral: what?)
            Trns: Huh?

3. Finn     Gaze: Abe----------------------------
            Sign: (smiling:)LOAN MONEY BANK 200 SEND(towards Carl)
            Trns: You can take a bank loan of 200 and send him.

4. Abe      Gaze: Finn----------------------down on cell phone
```

Finn's self-interrupted "L*" (line 1) is probably a "false start" (Crasborn, Bank, & Cormier, 2015; Maclay & Osgood, 1959) or a "slip of the hand" (Keller, Leuninger, & Hohenberger, 2003), and may be the reason for Abe's repair-initiation (2). Abe's facial expression and mouthing of *hva* ("what") is followed by a self-repair by Finn (3), but the repair is quite different from the trouble-source. The context, Finn's smiling and the rather face-threatening (Goffman, 1967) act of suggesting that Abe is short of money indicate that Finn's remark is a joke. Repair-initiations can generate a second chance for the trouble-source utterer. Extract 1 indicates that, instead of repeating his initial joke (1), Finn makes a new one. Still insinuating that Abe has money problems, Finn now (3) suggests that Abe takes out a bank loan. Abe's serious face during the exchange (2), his withdrawal of gaze (4), and his lack of response after the self-repair suggest a rejection of the joke.

The mouthing of *hva* ("what") is one of several resources employed to produce a non-manual OCRI. Abe (2) is also lowering his eyebrows and squinting. Other non-manual resources found in repair-initiation practices in the NTS data are raising eyebrows, leaning forward, poking or retracting the head, tilting the head up or down, raising the upper lip, pouching lips, and opening the mouth. All of these resources cannot and will not be employed at the same time. An example of a non-manual interjection with leaning forward and lowering eyebrows, but without mouthing a question-word, can be seen in Extract 3, line 3. As shown in section 3.1.2, it is also possible to produce non-manual OCRIs without using any of these resources.

3.1.1 Formulaic open-class repair initiations

Another subtype of OCRIs consists of formulaic expressions like "Sorry?" or "Pardon?" These are found in small numbers in informal conversation in English (Kendrick, 2015), Italian (Rossi, 2015), and Siwu (Dingemanse, 2015). Formulaic repair-initiations are not found in the NTS data, just as they were not in LSA (Manrique, 2016; Manrique et al., 2017), or any of the six other (spoken) languages investigated in the special issue of *Open Linguistics* from 2015/2016 (Baranova, 2015; Blythe, 2015; Enfield, 2015; Floyd, 2015; Gisladottir, 2015; Levinson, 2015). However, while the informal, conversational

corpora investigated in these studies contain no formulaic repair-initiations, that does not mean they are non-existent. Oloff (2018) suggests that formulaic repair-initiations are probably more frequent in institutional settings. According to a recent study of OCRIs used by hard-of-hearing adults speaking Finnish, *anteeksi* ("sorry") is the most frequent repair-initiation when visiting the hearing clinic, but one of the least used in conversation at work, and is not found at all in conversations at home (Laakso, Salmenlinna, Aaltonen, Koskela, & Ruusuvuori, 2019, p. 629).

3.1.2 Implicit open-class repair-initiations (freeze-look)

Studies of OIR in LSA have identified a type of implicit OCRI called "freeze-look" (Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017). Freeze-looks are characterized by the recipient holding their gaze on the trouble-source utterer, while taking no other manual or non-manual action. Basically, it is a notable absence of response, where the recipient acts as if they do not acknowledge that the trouble-source turn is completed. This is different from a mere suspension of response, in which the gaze is regularly withdrawn or another form of visible conduct is produced, like shifting pose, scratching the head, etc. It is also different from what Girard-Groeber (2020) considers a spoken language variant of the same phenomenon, namely when deaf or hard-of-hearing students in spoken language classrooms quickly establish a mutual gaze with the trouble-source speaker (the teacher) in order to request a repeat or reformulation. Quickly establishing mutual gaze can function as a subtle repair-initiation (Lerner, 2003), but it is difficult to define this practice as implicit. A sudden shift of gaze is active, while a freeze-look, however salient, is an absence of action.

The absence of action, which is defined as a freeze-look both in LSA and here in NTS, has been regarded a practice of other-initiation of repair, and in most cases leads to the prior signer performing self-repair, as in Extracts 2 and 4. Sometimes it can lead to an "upgrading" (Baranova, 2015, p. 86; Dingemanse, 2015, p. 250; Floyd et al., 2015, p. 194; Manrique & Enfield, 2015, p. 8; Manrique et al., 2017, p. 86 ff) of an explicit repair-initiation, as in Extract 3.

Research within the CA tradition regularly does not consider intentions (Sidnell & Stivers, 2012), but rather operates on a surface level (Albert & de Ruiter, 2018). The focus is on examining trajectories of action in a chronological rather than causal way, according to the next-turn proof procedure (Dingemanse et al., 2015; Sacks et al., 1978). We cannot know whether the performer of a freeze-look does this deliberately to request repair. What we do know is that this practice generally leads to a self-repair. Manrique's study (2016) found that, of 213 cases from LSA, 10% were freeze-look repair-initiations. Among the 112 repair-initiations in the NTS data, 28 (25%) are freeze-looks (see Table 1).

3.1.2.1 Freeze-look repair-initiation immideately followed by self-repair

In Extract 2, three women are discussing deaf education. Cora takes the floor to tell Ann and Beth that she recently learned that one of the Norwegian schools providing education for deaf children is quite large:

Video 3: Full-speed video of Extract 2 subtitled in English

Video 4: Half-speed video of Extract 2 subtitled in English

Extract 2 Freeze-look response followed by immediate self-repair

Summary:

1.	Cora		But at Nattland school, I heard, like “Really?”
2.			They’ve got 700 pupils.
3.	Beth	→	[freeze-look response 0.8 sec]
4.	Ann	→	[freeze-look response 0.8 sec]
5.	Cora		700 pupils in all at [Nattland] School.
6.	Beth		[Wow]
7.	Ann		Damn.

```
1. Cora     Gaze: Beth--------------------forward-
            Sign: BUT NATTLAND SCHOOL HEAR CA(head poke, eyes wide open)
            Trns: But at Nattland school, I heard, like "Really?"

2. Cora     Gaze: Beth-------------------------------
            Sign: SEVENHUNDRED PUPIL
            Trns: They've got 700 pupils.

3. Beth     Gaze: Cora-------------------------------
       →    Sign:                    (Freeze-look 0.8)

4. Ann      Gaze: Cora-------------------------------
       →    Sign:                    (Freeze-look 0.8)

5. Cora     Gaze: Beth-------------------------Ann--------------
            Sign: SEVENHUNDRED PUPIL AREA___NATTLAND SCHOOL
            Trns: 700 pupils in total at Nattland School.

6. Beth     Gaze: Cora-----------------------------------------
            Sign:                      (leans fwd, raises eyebrows)
            Trns:                         Wow.

7. Ann      Gaze: Cora-----------------------------------------
            Sign:                                          DAMN
            Trns:                                          Damn.
```

Cora (1) "pre-announces" (Schegloff, 1988, 1992, 2007) the newsworthiness of her story using "constructed action" (Cormier, 2015; Cormier, Smith, & Zwets, 2013; Ferrara & Johnston, 2014; Winston, 1992). She stares forward and acts shocked about what she has learned and is now going to tell the others. She then (2) tells them that this school has 700 pupils. Beth (3) and Ann (4) sit completely still, keeping their gazes on Cora, and exhibit no change of facial expression for 0.8 seconds, until Cora treats this dual freeze-look response as repair-initiation and repeats the information (5). This time, Beth (6) responds overlappingly by leaning forward and raising her eyebrows, while Ann (7) swears subduedly.

3.1.2.2 Freeze-look repair-initiation followed by upgrade

Whereas 18 of the 28 freeze-look responses in the NTS data are immediately followed by a self-repair, ten are followed by upgrades to explicit repair-initiations, before a self-repair is produced, as in Extract 3, which precedes Extract 1. In it, the interlocutors are discussing the Christmas party and paying for presents for their bosses. Carl has mentioned a woman called Pascale who is collecting the money. Prior to Extract 3, Abe asked Finn how much they had to pay for (or *at*) the Christmas party. (It later turns out that Abe is asking about a participation fee, which was not discussed.) Finn hesitates and replies "200" twice, gazing over at Carl for (dis)confirmation. Carl confirms the sum. Next, Abe asks Carl whether it is 200 *per person*. Carl confirms again and adds "to

Pascale". The extract starts with Abe suggesting that if his girlfriend comes along, it will be 400 all together:

Video 5: Full-speed video of Extract 3 subtitled in English

Video 6: Half-speed video of Extract 3 subtitled in English

Extract 3 Freeze-look response upgraded to explicit non-manual OCRI

Summary:

1. Abe So for me and my girlfriend, the sum is 400?
2. Carl →A (Freeze-look 0.6 seconds)
3. →B Huh?
4. Abe So, if my girlfriend is coming I tra[nsfer 400]
5. Carl [No. No, no,] no, no.

```
1.    Abe   Gaze: Forward-Carl---------------
            Sign: MEAN MEAN I MY WOMAN SUM 400
            Trns: So, for me and my girlfriend, the sum is 400?

2.    Carl  Gaze: Abe--------------
       →A   Sign: (Freeze-look 0.6)

3.          Gaze: Abe--------------------------------------------------
       →B   Sign: (Leans forward, raises upper lip and lowers eyebrows)
            Trns: Huh ?!

4. Abe      Gaze: Carl-------------------------------------------------
            Sign: MEAN WOMAN MY WITH MEAN I TRA[NSFER   4]00
            Trns: So,if my girlfriend is coming I transfer four hundred.

5. Carl     Gaze: Abe--------------------------------------------------
            Sign:                              [NO NO-NO]         NO-NO
            Trns:                              No, no,no,       no, no.
```

Line 1 shows Abe presenting his assumption that the sum will be 400. Carl's immediate response (2) is a freeze-look that lasts for 0.6 seconds, before he upgrades to an interjection in which he leans forward, lowers his eyebrows and raises his upper lip (3).

Abe (4) self-repairs with a full repeat of his prior turn, to which Carl responds and overlaps with several negations. Subsequent to Extract 3, Carl urges Abe to forget about the Christmas party (fee) because the money is for the presents.

3.1.2.3 Freeze-look repair-initiation and sequential positions

Publications on freeze-look repair-initiations in LSA (Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017) suggest that this kind of practice could also exist in spoken languages. Based on question-answer sequences in classrooms, Girard-Groeber (2018, 2020) reports on deaf and hard-of-hearing students displaying trouble with understanding by "an absence of the relevant next action accompanied with either the preservation of mutual gaze or the rapid establishment of mutual gaze with the trouble source speaker" (2018, p. 362). In situations where these "plurilingual" (2020, p. 435) students communicate in Swiss German Sign Language, and not using spoken language supported with signs, the recipients must already have their gaze on the signer. These findings (two out of 28 repair-initiations in the 2020 article) seem similar to the freeze-looks found in LSA and NTS. A study of open-class, embodied repair-initiations in spoken multilingual/L2 interaction (Oloff, 2018, p. 30) coins the term "freeze display", referring to what also seems to be the same phenomenon. One intriguing difference is that while freeze-look is generally found as a first attempt at repair-initiation in LSA and NTS, Oloff (2018) reports that, based on her data, freeze displays are used for upgraded repair-initiations. This practice contradicts the principle that subsequent repair-initiations are overwhelmingly used to upgrade from referentially weaker formats to stronger ones (Schegloff et al., 1977). (See Skedsmo (in press) for a more detailed discussion of "referential downgrading".)

According to studies on LSA (Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017), this type of repair-initiation makes up around 10% of the LSA cases. In the NTS data, they constitute 25%. In LSA, freeze-looks are described as occurring "immediately after a question by the other person" (Manrique & Enfield, 2015, p. 4), and in a later work as occurring "*especially* after a question has been asked" (Manrique, 2016, p. 31, emphasis added). Such a precondition, in which the freeze-look must follow a question (like in Extract 3), reduces the number of NTS cases of freeze-look from 28 to four. However, a question is not the only kind of utterance that calls for a response. Based on the NTS data, I suggest a more inclusive approach. Instead of focusing exclusively on questions and (absent) answers, I also include freeze-look repair-initiations that occur in the sequential position of a "second-pair part" (SPP), adjacent to any "first-pair part" (FPP) (Schegloff, 2007, p. 59). In the NTS data, 16 of the 28 freeze-looks follow a question or other FPPs, such as statements (as in Extract 2) or requests. This results in a freeze-look frequency comparable to that in LSA. If we also acknowledge that a SPP often calls for a receipt or "post-expansion" (Schegloff, 2007, p. 59; Stivers, 2012, p. 198), then this accounts for the remaining 12 freeze-looks in the NTS data.

An answer (SPP) to a question (FPP) can also be a trouble-source. In NTS, the freeze-look repair-initiation is also employed in these cases. Extract 4 shows Abe asking Ben where the school at which he attends evening classes is located. Formulating place often takes a bit of work (Kitzinger et al., 2013; Schegloff, 1972). Abe displays understanding of the first parts of Ben's explanation but produces a freeze-look when Ben mentions the "camper van hotel". Ben then performs a self-repair in reformulating his answer.

Video 7: Full-speed video of Extract 4 subtitled in English

Video 8: Half-speed video of Extract 4 subtitled in English

Extract 4: Freeze-look repair-initiation targeting second-pair part. (The bracketed arrow at line 12 points to a repair-initiation discussed in section 3.2.2 about candidate offers.)

Summary:

1.	Abe:		Where is the school?
2.	Ben:		Over at.. uhm... Sem.
3.	Abe:		Mhm
4.	Ben:		Nearby. It's Broen number six
5.	Abe:		Ah!
6.	Ben:		By the camper van hotel
7.	Abe:	→	[(Freeze-Look 1.5 sec) (Weak squint 2.1)]
8.	Ben:		[(1.3) Uhm... In Sem.]
9.	Abe:		Mhm.
10.	Ben:		When you're on the highway, on your left
11.			there's a huge
12.	Abe:	(→)	The As[kjem-building]? Yes. Yes.
13.	Ben:		[Mhm. Askjem]

```
1.    Abe   Gaze: Ben---------------
            Sign: WHERE SCHOOL WHERE
            Trns: Where is the school?

2.    Ben   Gaze: Abe-down------------------Abe
            Sign: POINT-there FILLED-PAUSE SEM
            Trns: Over at.. uhm… Sem.

3.    Abe   Gaze: Ben--
            Sign:(upward nod)
            Trns:  Mhm.

4.    Ben   Gaze: Abe----- Down------------Abe
            Sign: NEXT-TO B-R-O-E-N NUMBER SIX
            Trns: Nearby. It's Broen number six.

5.    Abe   Gaze: Ben---
            Sign:(strong upward nod)
            Trns:  Ah!

6.    Ben   Gaze: --------------------------------
            Sign: CLOSE LIVE CAR HOTEL LONG-SQUARE-SHAPE(left-forward)_
            Trns: By the camper van hotel.

7.    Abe   Gaze: Ben---------------------------------
       →    Sign: [(Freeze-look 1.5)(weak squint 2.1) ]

8.    Ben   Gaze: Abe---------------------------------
            Sign: [__(1.3)____FILLED-PAUSE        SEM ]
            Trns:            uhm…      In Sem.

9.    Abe   Gaze: Ben-----------------
            Sign: (nod)
            Trns:  Mhm

10.   Ben   Gaze: Abe-------------left---
            Sign: LOOK MOTOR ROAD LOOK-left
            Trns: When you're on the highway, on your left

11.         Gaze: Abe--------------------------------
            Sign: HUGE
            Trns: there's a huge…

12.   Abe   Gaze: Ben-----------
      (→)   Sign:              A-S-[K-J-E-M (square long shape)]YES YES
            Trns:          The Askjem-building?            Yes, yes.

13.   Ben   Gaze: --------------------------------
            Sign:                  [(nod)A - S - K - J - E - M ]
            Trns:                   mhm, Askjem
```

Abe's question (1) constitutes an FPP. and the first two installments of Ben's SPP (2 and 4) are both responded to with displays of understanding (3 and 5). When Ben's third

installment (6) refers to the camper van hotel, Abe freezes. He holds that pose for another 2.1 seconds. I describe his subsequent facial gesture as a “weak squint”. However subtle, this might be perceived as a token of willingness to make an effort or a sign of continued interest. Ben (8) returns to their already established common reference (“Sem”) and Abe displays understanding (9). Instead of again referring to the camper van hotel, Ben describes something huge on the left side of the highway. Abe offers a candidate understanding (see section 3.2.2) by fingerspelling the name of the building (12). Ben immediately nods and overlaps with fingerspelling of the same name (13). (Fingerspelling as a resource for initiating repair is treated in Girard-Groeber, 2020.)

The examples in Extract 2 and 4 show that freeze-look repair-initiations in NTS do not only target questions as trouble-source turns, as reported from LSA, but also other FPPs and SPPs.

Having described explicit and implicit subtypes of OCRIs in NTS, we now move on to restricted repair-initiations, which in different ways and to various degrees “frame” or “present” (Jefferson, 1972) problematic elements in the trouble-source turn.

3.2 RESTRICTED REPAIR-INITIATIONS

Restricted formats for repair-initiations can be divided into requests for specification and candidate offers that call for (dis)confirmation (see e.g. Rossi, 2015). To produce a restricted repair-initiation, the recipient must perceive at least parts of the trouble-source turn, and then use these as a means of directing the trouble-source turn utterer’s attention towards the problematic. The following subsections will focus first on requests for specification, and then look at candidate offers. Restricted repair-initiations may partly or fully repeat the trouble-source utterance, while an added question may call for specification. Alternatively, a slot can be left open, or replaced with a question word, like “who” or “what”. This guides the trouble-source utterer to where the trouble is (Dingemanse et al., 2014; Jefferson, 1972; Schegloff et al., 1977).

While restricted repair-initiations frequently contain other-repeats, this is not always the case. Other-repeats have several functions other than initiating repair. They can, e.g. serve as mere backchanneling, or displaying perception and/or newsworthiness (Dingemanse et al., 2015; Schegloff, 1997). Repair-initiations containing other-repeats demonstrate to the trouble-source utterer how the addressee has perceived (parts of) the trouble-source turn (Dingemanse et al., 2014). The recipient may have failed to perceive parts of it, be uncertain about the perception being correct, or the trouble can be related to understanding the expressions used or actions proposed (Clark, 1996; Clark & Schaefer, 1987; Dingemanse et al., 2014).

3.2.1 Requests for specification

Requests for specification can make use of content question-words like “where”, or “who”, or they can be formatted as alternative questions that request specification of which alternative is considered correct (Dingemanse et al., 2016; Koshik, 2005), e.g.

"You mean you or John?" (In this study, one alternative question has been included in requests for specification.) Requests for specification constitute 9% of the repair-initiations in the NTS data. Two of the cases with content question words occur after each other in Extract 5, which is from the same conversation as Extracts 1 and 3 but took place earlier. To preserve the anonymity of persons discussed, but not present, the video of this extract cannot be shown. Instead, several pictures are used to present the trajectory. Prior to Extract 5, Carl has reminded the group that they have to transfer money for presents via PayPal to an employee called Pascale by the 23rd of November. Due to *schisming* (a conversation transforming into multiple conversations, see Egbert, 1997a; Egbert, 1997b), Ben was talking to Ed during this exchange and did not see Carl's reminder. Finn jokes with Abe about how Abe would be able to pay without a PayPal account. Carl smiles and follows the discussion. The transcribed extract starts when Ben (with lowered eyebrows) waves towards Finn and Abe (Picture 1, line 1 in the transcription) in order to get their attention.

Extract 5: Request for specification, employing content question words

Summary:

1.	Ben		Why, hey, hey, hey, hey. (To Carl:) Hey, why are they paying? Hey.
2.	Carl		(Gazing towards Abe)
3.	Ben		Hey. What payment? Why are they paying?
4.	Carl		(Gazing briefly towards Finn, then at Ben)
5.			To Pascale, you know.
6.			I told you… the present for Grant.
7.	Ben		Mhm (1.1)
8.	Carl		We and the others are giving presents to Grant and Hal.
9.	Ben	→	When do we have to pay and to whom do we [pay?]
10.	Carl		[23rd] of November.
11.			I posted it in the group.
12.			I did that long ago. You said "ok"
13.	Ben	→	Yes, I said ok, but I ask: whom are we paying to?
14.	Carl		It says there, Pascale, with account number.
15.	Ben		(Turns attention to phone for more than 2 minutes)
16.			Done. Done.

1. Ben Gaze: Finn----------Abe---------Carl----------
Sign: WHY HEY HEY HEY HEY HEY PAY WHY (Touches Carl)
Trns: ***Why, hey, hey, hey, hey. Hey, why are they paying? Hey.***

2. Carl Gaze: Abe----------
Sign: (smiles)

3. Ben Gaze: Carl----------
Sign: (Touches Carl)WHAT PAY WHY POINT(Finn/Abe)
Trns: ***Hey. What payment? Why are they paying?***

4. Carl Gaze: Finn----------Ben----------Finn-Ben------
Sign: (smiles) (stops smiling)

5. Gaze: Ben----------
Sign: TO P-A-S-C-A-L-E KNOW POINT(Ben)
Trns: ***To Pascale, you know.***

6. Gaze: Ben----------
Sign: I ASK YOU PRESENT TO GRANT(nod)
Trns: ***I asked you… the present for Grant.***

7. Ben Gaze: Carl----------
Sign: (weak nod)(1.1)
Trns: ***mhm***

8. Carl Gaze: Ben-forward-Ben----------
Sign: WE GROUP AND OTHER-GROUP GIVE PRESENT TO GRANT AND HAL
Trns: ***We and the others are giving presents to Grant and Hal.***

9. Ben Gaze: Carl----------
→ Sign: WHEN PAY TO WHO [PAY ?]
Trns: ***When do we have to pay and to whom do we pay?***

10. Carl Gaze: Ben----------down—Ben----down----------Ben--
Sign: [TWENTY-THREE] NOVEMBER
Trns: ***23rd of November.***

11. Gaze: down----------Ben----------
Sign: DONE THROW POINT(phone)GROUP
Trns: ***I posted it in the group.***

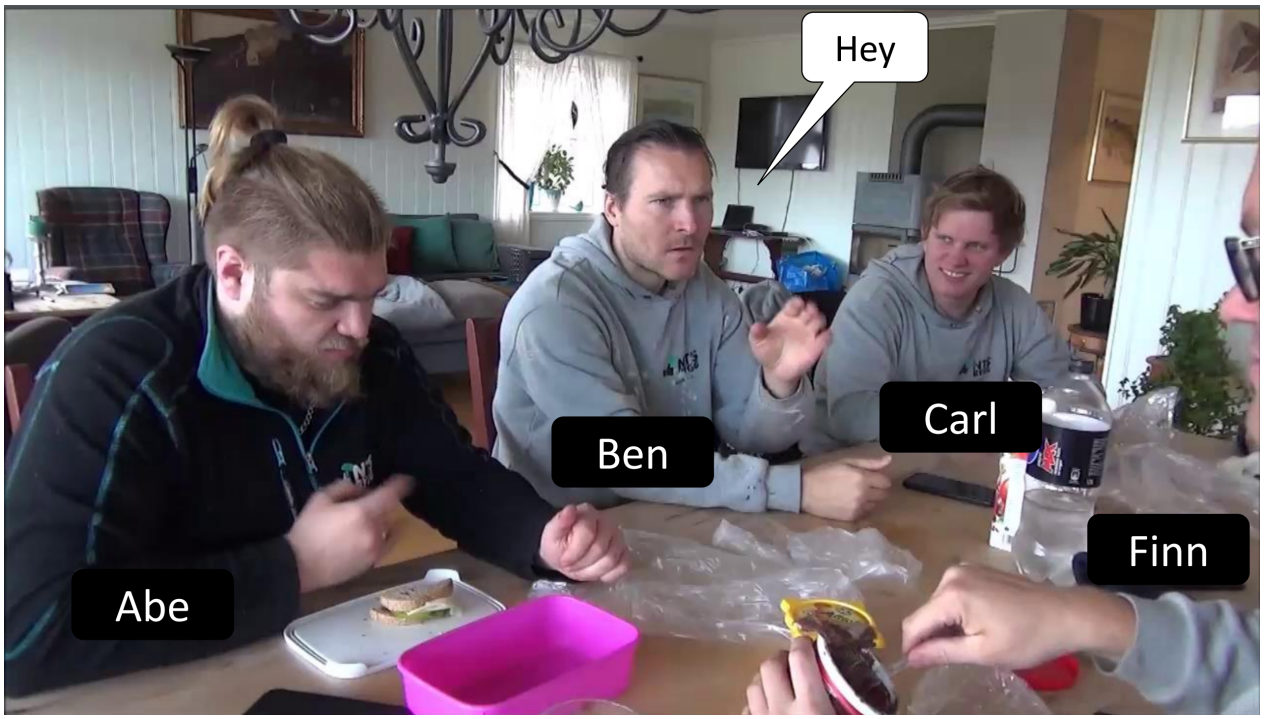
12. Gaze: down----------Ben----------
Sign: FINISH LONG-AGO YOU OK POINT(Ben)
Trns: ***I did that a long time ago. You said "ok".***

13. Ben Gaze: Carl----------
→ Sign: YES I OK I ASK WHO PAY TO
Trns: ***Yes, I said ok, but I ask: whom are we paying to?***

```
14.   Carl  Gaze: phone-Ben----------------------
            Sign: SAY P-A-S-C-A-L-E WITH ACCOUNT NUMBER
            Trns: It says there, Pascale, with account number.

15.   Ben   Gaze: phone-(1 min 21 sec)-Carl- phone /1 min 2 sec)--------
            Sign:(Turns attention to phone for more than 2 minutes)

16.         Gaze: phone---------Carl------------phone-------------Carl
            Sign: (Puts down phone)FINISH FINISH (Returns to phone)
            Trns:                    Done. Done.
```

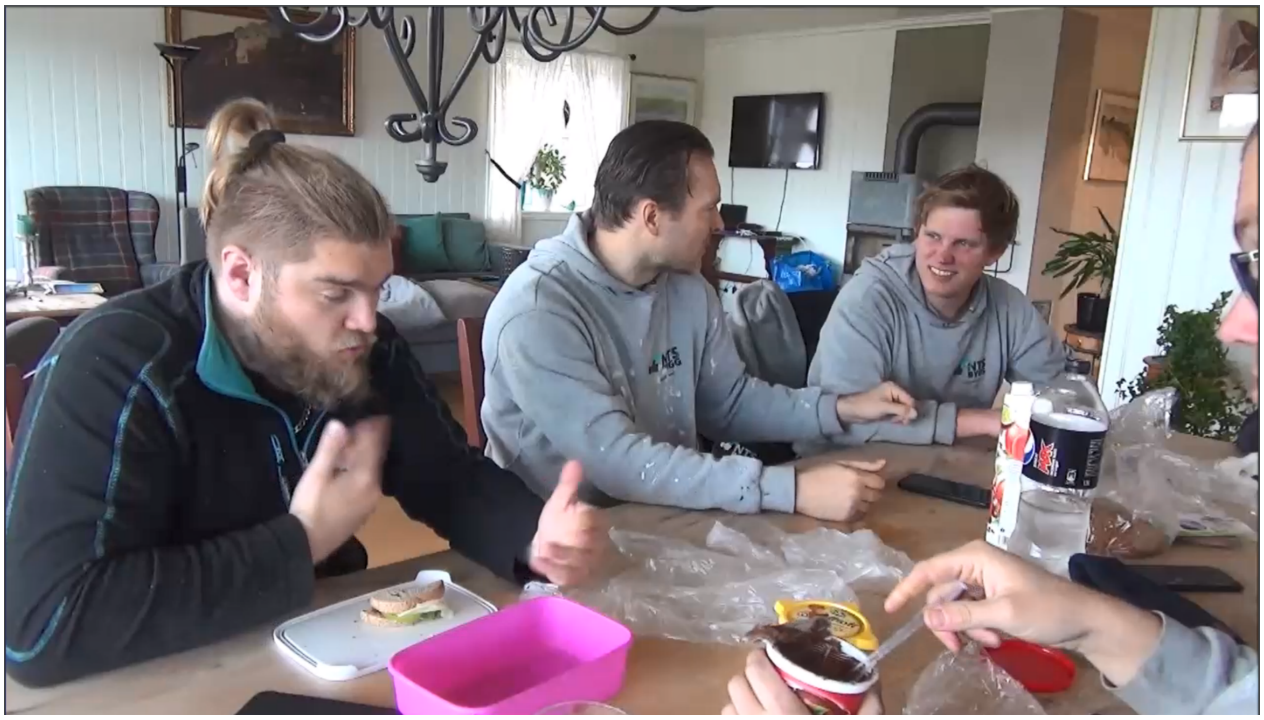
```
1. Bill     Gaze: Cyd--------Forward------------------------------
            Sign: THINK GOOD GO-THERE BECOME ONLY ONE WAY NOT MORE
            Trns: Thought it'd work, but it was only enough for one way.

2. Cyd      Gaze: Bill----------------------------Bill's sign
            Sign: (nod)212 POINT(down right)? 2___[___]
            Trns: Mhm. That one is 212? Or 2…

3. Bill     Gaze: Cyd---------------------------------------
            Sign:                    (no mouthing:)[100]
            Trns:                                   100

4. Cyd      Gaze: Bill
      →     Sign: 100?
            Trns: 100?

5. Bill     Gaze: Cyd
            Sign: 100(shrugging) PALMS-UP [OLD TYPE]
            Trns: 100. I know. It's the old type.

6. Cyd      Gaze: Bill------------food-Bill--food
            Sign:           (mouthing only:[ "ooo" ])
            Trns:                              ooo…
```

Ben summons Finn and Carl with five waves of his hand (line 1, Picture 1), but fails to get their attention. Hence, this does not constitute an OIR sequence, according to the next-turn proof procedure. He then turns to Carl and summons him with a wave, and signs “Why are they paying?” Carl (2) gazes, smiling, towards Abe and does not respond to Ben.

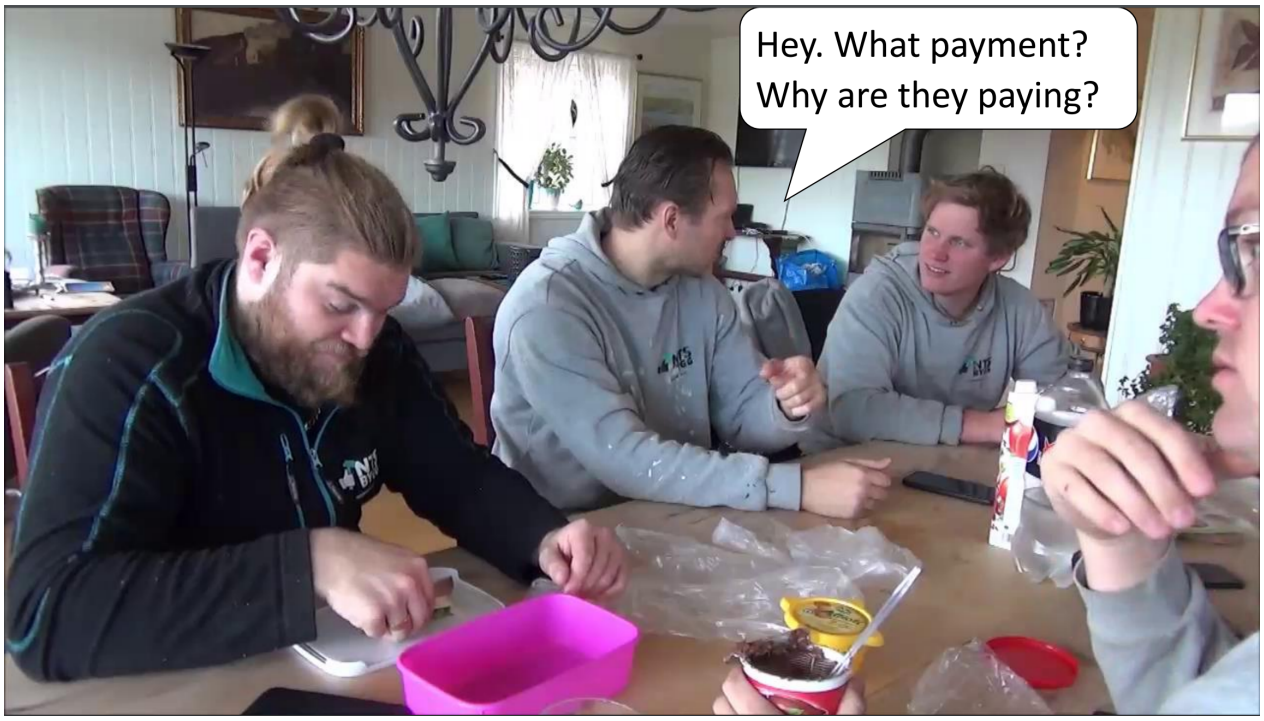


Picture 1: Ben waving towards Abe and Finn. (Lines 1 and 2.)

Ben touches Carl's arm twice and asks him what payment they are discussing (line 2 and 3, Picture 2).

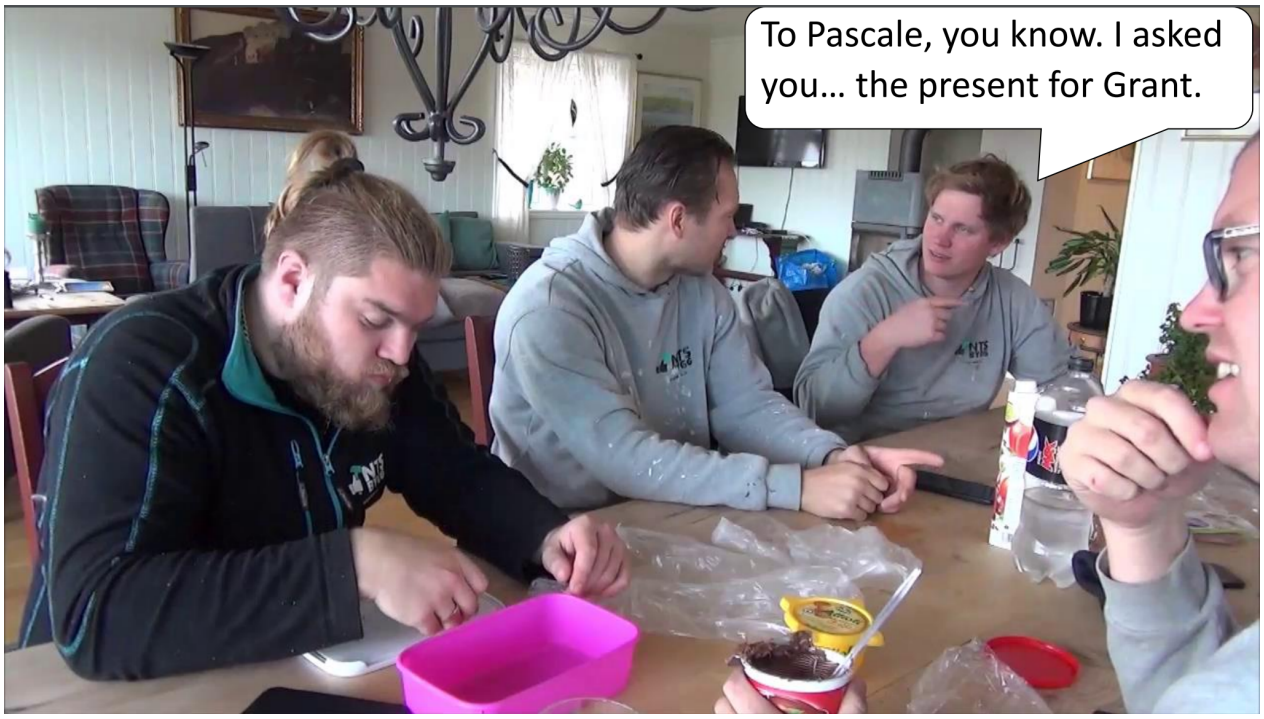

Picture 2: Ben summons Carl by touching his arm. (Start of line 3 and 4.)

Carl (2 and 4) is watching Finn and Abe's humorous discussion and slowly starts turning his head towards Ben when he is summoned by him (Picture 2), and then finally moves his gaze towards Ben. Ben (3) asks Carl what payment Abe and Finn are discussing.



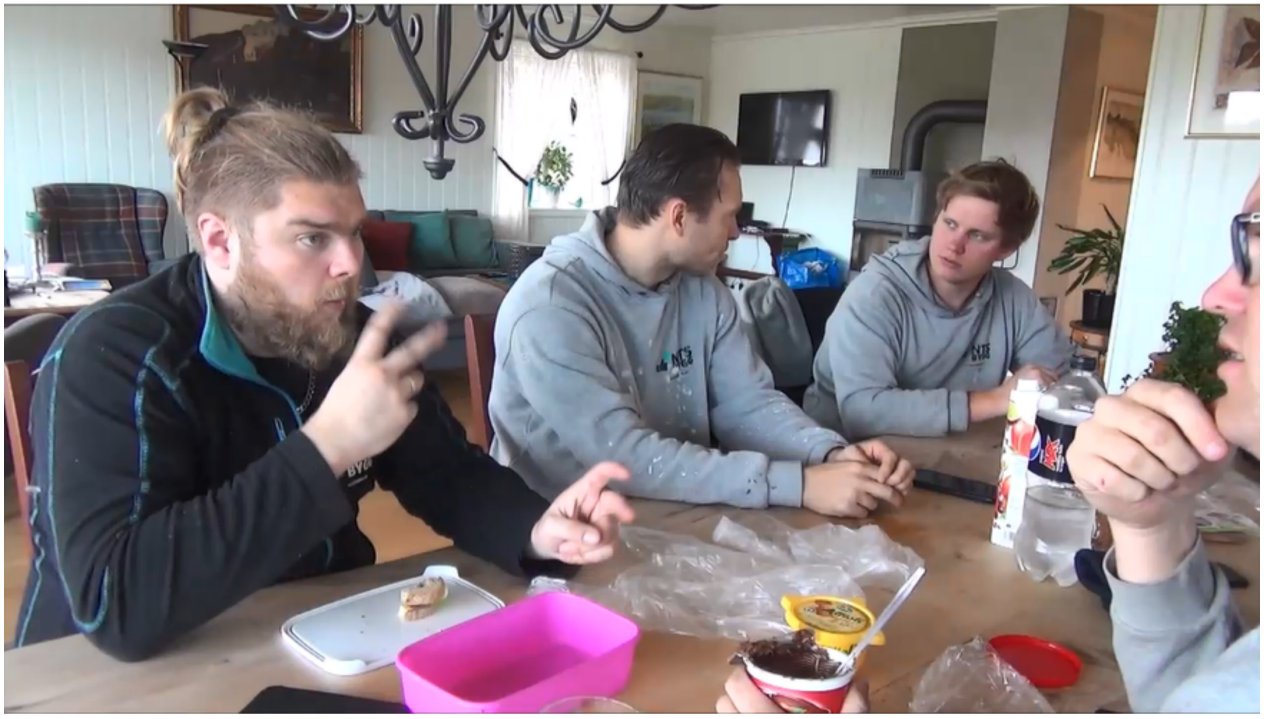
Picture 3: Ben asks Carl what payment Abe and Finn are discussing. (Lines 3 and 4.)

Carl (5) replies with the name of the woman who is collecting the money. Carl (6) reminds Ben that he already asked the group about this money for a gift to their boss (Picture 4).



Picture 4: Carl telling Ben about the collection of money for the presents. (Lines 5, 6 and 7.)

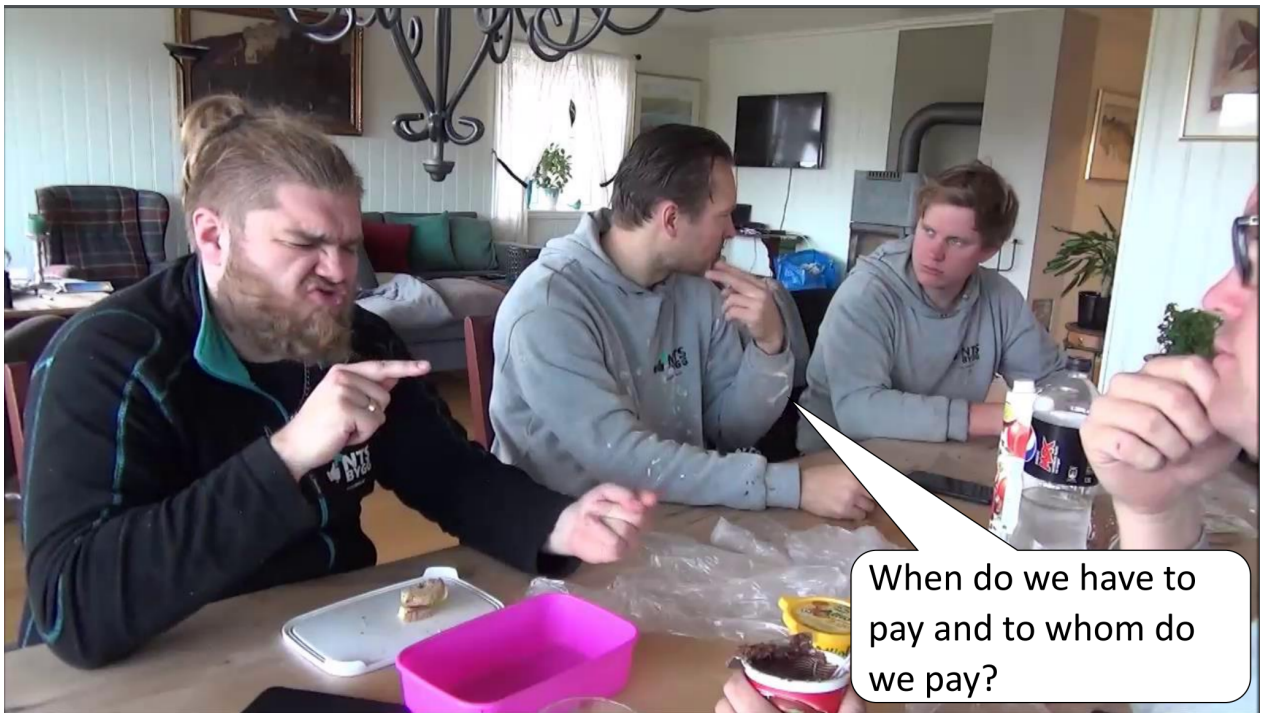
Ben (7) responds with one weak nod (Picture 5). Carl rests his hands on the table, indicating that he has finished explaining. Carl still monitors Ben, who remains turned towards him with no visible response for 1.1 seconds (7). Ben is probably doing a freeze-look repair-initiation here, targeting Carl's SPP in lines 5 and 6. However, since we cannot see his whole face, this sequence is not included in the core selection of cases.



Picture 5: Ben (7) gives a weak nod to Carl's answer (5,6) but keeps his gaze on Carl with no further response. (Line 7).

Ben's lack of response is followed by Carl (8) providing an expanded version of his previous turn, with more details about who is giving presents to whom.

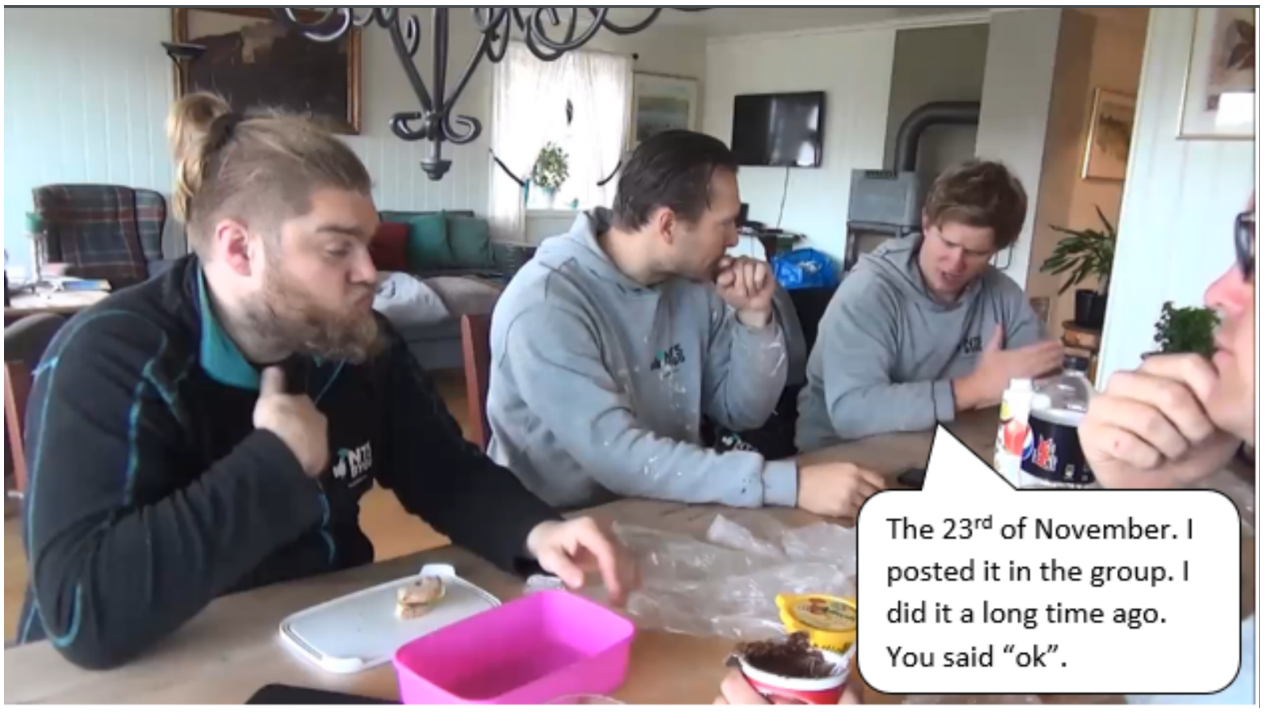
Neither Ben's initial question (3) to Carl about what kind of payment Abe and Finn are discussing[iii] nor his question about when it has to be made (line 9, Picture 6) are analyzed as repair-initiations targeted at trouble of perception or understanding of the previous turns available to Ben, as he was gazing towards Ed when this information was first imparted.



Picture 6: Ben asking when and whom he must pay. (Lines 9 and 10.)

This situation, in which trouble arises from not having seen (parts of) utterances, exemplifies a difference between signed and spoken interaction, and between partial perception and no perception at all. In spoken interaction, it is possible to attend to utterances produced behind one's back, or even two utterances produced simultaneously by two different people. A case of "not hearing" in spoken interaction, e.g. due to noise or the recipient doing something else, will in many cases still be a *partial* hearing. A proper non-hearing, in which the potential recipient has not seen or otherwise noticed anyone talking, will rarely lead to repair-initiation, as the potential recipient will not be aware of having been addressed. In signed conversation, when an interlocutor is gazing in one direction, anything visual going on outside their peripheral vision is inaccessible (Johnson, 1991). If Ben's when-question was to be regarded as a repair-initiation, it would not be targeting what was conveyed to him, but rather what was not conveyed to him, because he did not see that utterance.

However, Ben's who-question (line 9, Picture 6) corresponds to Carl's line 5, where he said, "To Pascale, you know" and this question hence qualifies as a repair-initiation. Carl looks towards Ben when Ben signs "who" (Picture 6), and he provides self-repair to the questions, but not immediately. Carl's self-repair comes in lines 10, 11 and 12, and is not a reply to "who" (maybe because he just told Ben in line 5). Instead, Ben reminds Carl about the due date (10) and adds that he has posted this information in the "group" (11) a long time ago, and that Ben had replied "ok" at that point (line 12, Picture 7).



Picture 7: Carl partly replying to Ben's question. (Lines 10, 11 and 12.)

Ben (13) confirms with a partial other-repeat ("Yes, I said ok") and then again initiates repair, asking for the information Carl gave him in line 5 regarding whom he should pay (Picture 8). We cannot know why Ben still doesn't know whom to pay. It is possible that Ben misread Carl's fingerspelling of "Pascale" (5) as "PayPal"[iv] and that, to Ben's knowledge, this exchange with Carl still has not informed him regarding whom to pay.

Picture 8: Ben asking Carl again to whom he is going to pay. (Line 13.)

Carl (14) points towards Ben's phone and states that the information is in there. He then finally provides a self-repair to Ben's who-questions (9 and 13) by repeating Pascale's name, and emphasizing that her account information is in there. None of them mention that Ben was engaged in a parallel conversation when Carl initially reminded the group about the money being collected.

Ben (15) turns his attention to his phone for almost two-and-a-half minutes, only interrupted by a quick glance towards Carl, who is talking to Abe. Ben then puts the phone down, looks back to Carl, who is now talking to Ed. Ben signs that he is now done, without calling upon anyone's attention or being looked at by anyone. At no point does Ben indicate that he has mistaken "Pascale" for "PayPal". We cannot know if he did, or whether he realized any such misunderstanding upon reading the message Carl had posted.

There are several OIR cases in the NTS data that are seemingly rooted in participants having missed parts of a conversation due to schisming or being visually engaged in other conduct (looking at their phones, food, etc.). Both Extract 3 and Extract 7 would also probably not have become OIR sequences were it not for schisming and alternative conduct. However, nowhere in the data does anyone accuse others of not paying attention, and no one mentions that they suspect they have missed something. This is possibly a side effect of the previously mentioned feature of signed language interaction. Interlocutors have no way of perceiving what is signed outside their peripheral vision, and as such they cannot know if they have missed something.

The next subsection will address three different aspects of candidate offers.

3.2.2 Candidate offers

Offering a candidate understanding or a candidate perception calls for (dis)confirmation rather than specification (Rossi, 2015). It is suggested that the candidate offer repair-initiation format is the most restricted format, located at the strongest end of the continuum of referential strength (Manrique & Enfield, 2015; Schegloff et al., 1977). It is also the most frequent format in the NTS data, accounting for 56% of the cases.

The action of offering a candidate is often done with a full or partial other-repeat, but it does not depend on this. In Extract 4, Abe is fingerspelling “Askjem” (12) as a candidate understanding of the building to which Ben is referring. This candidate offer is not designed as an other-repeat, but Ben’s subsequent confirmation in which he overlaps by fingerspelling “Askjem” (13), is.

3.2.2.1 Candidate offer with other-repeat signalling perception problem

Determining whether a repair-initiation is announcing trouble of perception, trouble of understanding or even of acceptability (Svennevig, 2008) is often impossible. Sometimes, however, there is evidence to indicate that the other-repeat represents a candidate perception. For example, in Extract 6, Bill tells Cyd about an incident in which he drove an electric van to another city and ran out of power. Cyd then asks about the kilometer range of that van. Bill’s answer is produced without any mouthing (probably because they are eating), which makes it crucial to see the manual sign clearly. The numbers 100 and 200 are produced with similar signs, with one or two fingers extended.

Video 9: Full-speed video of extract 6 subtitled in English

Video 10: Half-speed video of extract 6 subtitled in English

Extract 6: Candidate offer with other-repeat signaling perception problem

Summary:

1.	Bill		Thought it'd work, but it was only enough for one way.
2.	Cyd		Mhm. That one is 212? Or 2[…] (gaze follows Bill's sign)
3.	Bill		[100]
4.	Cyd	→	100?
5.	Bill		100. I know. [It's the old type]
6.	Cyd		[ooo…]

```
1. Bill     Gaze: Cyd--------Forward-------------------------------
            Sign: THINK GOOD GO-THERE BECOME ONLY ONE WAY NOT MORE
            Trns: Thought it'd work, but it was only enough for one way.

2. Cyd      Gaze: Bill---------------------------Bill's sign
            Sign: (nod)212 POINT(down right)? 2___[___]
            Trns: Mhm. That one is 212? Or 2…

3. Bill     Gaze: Cyd--------------------------------------
            Sign:                  (no mouthing:)[100]
            Trns:                                100

4. Cyd      Gaze: Bill
       →    Sign: 100?
            Trns: 100?

5. Bill     Gaze: Cyd
            Sign: 100(shrugging) PALMS-UP [OLD TYPE]
            Trns: 100. I know. It's the old type.

6. Cyd      Gaze: Bill------------food-Bill--food
            Sign:           (mouthing only:[ "ooo" ])
            Trns:                             ooo…
```

Cyd first suggesting a range of 212 km shows that he has different expectations than Bill's reply reveals. When Bill (3) signs "100" without mouthing the word *hundre* ("one hundred"), Cyd follows the manual sign with his gaze, probably to determine if it is "100" or "200". Cyd (4) pokes his head forward, raises his eyebrows and repeats "100?" and Bill (5) self-repairs by repeating "100". Cyd, quickly following Bill's sign with his gaze, indicates that this repair-initiation is about perceptual trouble. However, his head poke and raised eyebrows also allow Bill to interpret Cyd's other-repeat (4) as a question-formatted news receipt. This interpretative potential of Cyd's conduct may motivate Bill's

(5) added palms-up (Kensy, Natasha, & Susan, 2018; McKee & Wallingford, 2011; Mesch, 2016), here translated as “I know”, and his comment about the van being “the old type”. In this way, Bill treats Cyd’s repair-initiation as being not only about perception or understanding, but also about acceptability (Svennevig, 2008). Cyd then (6) withdraws his gaze and mouths a prolonged “ooo”, which is regularly employed in NTS as an interjection that conveys both positive and negative stances, depending on the context and other non-manual markers. Such expressions are highly context- and prosody-sensitive, and are therefore challenging to translate into conventional interjections or lexical items. Raised eyebrows could be interpreted as “Exciting!” Lowered eyebrows and squinting could be “Yikes!” This one is quite unmarked, which in this context could be translated as something like “That’s not much”. In the translation line, it is only indicated with “ooo…”.

3.2.2.2 Candidate offer with other-paraphrasing

As noted, a question-marked other-repeat can serve as a candidate offering repair-initiation announcing trouble of either perception or understanding. An other-paraphrasing, i.e. a functional or propositional but not structural repeat, can fulfill the same functions, but also demonstrate how the utterance is understood (Clark, 1996; Clark & Schaefer, 1987; Dingemanse et al., 2014). In the following example (Extract 7), Abe (9) performs an other-paraphrasing candidate understanding repair-initiation, targeting Ben’s explanation of Carl’s initial question, which occurred almost a minute before Extract 7.

Prior to Extract 7, Carl, Ben and Ed are discussing if there is an easy way to switch between front and back camera when using FaceTime. Abe enters the conversation, claiming he knows how to do it, and leans over with his own phone to show Carl and Ben. After the demonstration, Abe withdraws and looks at his own phone. Carl says to Ben that Abe was not showing them FaceTime. Ben replies to Carl that it was Messenger. Extract 7 starts with Ben telling Abe what problem Carl was really addressing.

Video 11: Full-speed video of extract 7 subtitled in English

Video 12: Half-speed video of extract 7 subtitled in English

Extract 7: Other-paraphrasing the trouble-source. (Lines only showing gaze removed in summary.)

Summary

1.	Ben		Hey. He means
2.			how to flip the camera in FaceTime.
3.	Abe		(Lifts, head, leans back, open [mouth) Oh!]
4.	Carl		[Hey, hey, hey] (to Ben)
6.	Abe		Yes. Like that! Hey (to Ben)
9.	Abe	→	Toggling between front- and back camera,
12.			he means?
13.	Ben		Mhm.
15.	Abe		Oh! I don't know.

```
1.    Ben   Gaze: Abe---------------------------------------
            Sign: (Touches Abe's lower arm) POINT(Carl) MEAN
            Trns:          Hey.                    He means

2.    Ben   Gaze: Abe----------------------own phone--
            Sign: POINT(Carl)FACE-TIME HOW TURN CAMERA
            Trns: how to flip the camera in FaceTime.

3.    Abe   Gaze: Ben-Ben's phone-forward-Ben-------------------------
            Sign: (      0.7    )(lifts head, leans back, open mouth)
            Trns:                                  Oh!

4.    Carl  Gaze: Ben's phone---Abe-----------------------------------
            Sign:                  (touches Ben's lower arm x3)
            Trns:                          hey, hey, hey.

5.    Ben   Gaze: Own phone-------------------------------------------

6.    Abe   Gaze: Ben-------------------------------
            Sign: YES YES LIKE (touch Ben's shoulder)
            Trns: Yes. Like that!       Hey.

7.    Carl  Gaze: Abe-------------------------------

8.    Ben   Gaze: Own phone------------------------
```

```
9.    Abe   Gaze: Ben-----------------------------------------------
       →    Sign: (CL:)CAMERA-TO-FACE CAMERA-FROM-FACE CAMERA-TO-FACE
            Trns:     Toggling between front- and back camera,

10.   Ben   Gaze: Own phone-------------------------------------------
            Sign:                                          (nod)
            Trns:                                           Mhm.

11.   Carl  Gaze: Abe-----------------------------------------------
```

```
12.   Abe   Gaze: Ben-----------------Own phone-------
        →   Sign: MEAN POINT(Carl)(open mouth nodding)
            Trns: he means?                Oh!

13.   Ben   Gaze: Abe----------Own phone--------------
            Sign:          (nod)
            Trns:           Mhm.

14.   Carl  Gaze: Abe----------------------------------
            Sign:                   HEY HEY
            Trns:                  Hey, hey.
```

```
15.   Abe   Gaze: Own phone---------------------------Ed-
            Sign: DO-NOT-KNOW I
            Trns: I don't know.
```

As early as line 3, Abe displays a change-of-state token (Girard-Groeber, 2015; Heritage, 1984). He shows now-understanding (Heinemann, 2016; Koivisto, 2015) by withdrawing his gaze and leaning backwards with his mouth open. Carl looks at him, but Ben does not. Carl touches Ben's lower arm (4). Ben (5 and 8) is still looking at his own phone when Abe (6) displays understanding again, and Abe (6) summons Ben by touching his shoulder. Having attracted Ben's attention, Abe (9 and 13) offers a candiate understanding repair-initiation by producing an other-paraphrasing using a classifier sign (Emmorey, 2003) that represents a camera (index finger and thumb extended), pointing to his own face, then forward, then back to his face.

Abe's other-paraphrasing (9) occurs subsequent to his display of understanding (6). The other-paraphrasing is therefore ambiguous in terms of whether it is an additional display of understanding, or if he is checking whether he has understood Ben correctly. Abe's raised eyebrows (question marking) (9 and 12), the explicit candidate understanding marking suffix "he means?" (12), and Ben's confirming nods (10 and 13) suggest that Abe's utterance is both produced and treated as a repair-initiation. Abe makes another display of understanding (12), while Carl summons him twice by waving. Abe then moves his attention to his own phone, and states that he does not know (15).

The extract shows that Abe's change-of-state-tokens (3, 6 and 12) are not merely symptoms of now-understanding, but displays of it. In other words, he is willing to put

effort into displaying his now-understanding to the others. The other-paraphrasing (9) demonstrates his understanding of Ben's prior turn (1 and 2). Abe's explicit displays of understanding in this extract are significantly different from Ben's conduct in Extract 5. There, Ben merely turns to his phone for a long time and then signs that he is finished, without summoning anyone.

3.2.2.3 Candidate offer repair-initiation or correction?

The change of terminology from "correction" to "repair", as coined by Schegloff et al. (1977, p. 363), was justified on the basis that the term "correction" was commonly understood as referring to targeting errors. In other words, many errors were treated as insignificant to the progressivity of conversation. Rather, the focus was on how interactants solve their problems, rather than how and when they reject each other's language. As shown, repair-initiations can target troubles of perception, understanding, and acceptability that employ the same formats. OIR practices can target mistakes in ways that are less face-threatening for both parties than blunt declarations that the other's utterance is dispreferred, factually wrong, or linguistically erratic. Jefferson (1972) demonstrates how candidate understandings with other-repeats can target errors, without explicitly claiming them as erratic (Figure 2):

STEVEN:	One, two, three, ((pause)) four, five, six ((pause)) eleven, eight nine ten.
SUSAN:	"E*le*ven"? –eight, nine, ten ?
STEVEN:	Eleven, eight, nine, ten.
NANCY:	"E*le*ven" ?
STEVEN:	Seven, eight nine, ten.
SUSAN:	That's better.

Figure 2: From Jefferson (1972, p. 295).

Susan and Nancy do not explicitly tell Steven that he is wrong, but other-repeat his erratic counting with a questioning prosody. Steven treats at least Nancy's other-repeat as a correction by changing his manner of counting to the conventional one, and Susan compliments his third and successful attempt. Knowing that the girls are eight and Steven is six (Jefferson, 1972, p. 294) illustrates the epistemic hierarchy among them. If the age difference were the other way around, we might be willing to read the girls' other-repeats as tokens of puzzled curiosity, or as signals of actual trouble of understanding. Among adult co-workers, such asymmetries are less predictable, and therefore determining whether a repair-initiation suggests an error or signals plain trouble of understanding is not always straightforward, even when considering next-turn proof.

Candidate understandings that contain other-paraphrasing (like Extract 7), or which propose that the other might mean something different from whatever they have just said, can occupy the boundary between other-initiation of *self*-repair and the more invasive, and hence dispreferred other-initiated *other*-repair (other-correction) (Albert & de Ruiter, 2018). In extract 8, three sign language teachers are discussing their need for classrooms for 44 students who are due to arrive two weeks later. In Norway, week numbers (1–52) are used in colloquial speech, including in NTS. The recording took place in week two and they refer to week four. Extract 8 starts when Bo is looking at a list on the wall and counting the rooms he has booked. (The striking similarity between the first line in Extract 8 and that from Jefferson (Figure 2) is entirely coincidental.)

Video 13: Full-speed video of Extract 8 subtitled in English

Video 14: Half-speed video of Extract 8 subtitled in English

Extract 8: Candidate offer repair-initiations with partial repeat of the trouble-source utterance

Summary

1.	Bo	I, I, hey, it's one, two, three, four…, five, six… seven.
2.		Think we already booked seven… next week seven…
3.	Cora	mhm.
4.	Bo	Because the ot[her…]
5.	Ann →	[Next week?] Is it week four you are talking about?
6.	Cora	(Looking at wall) Forty-four…. (No one looks at her)
7.	Bo	Week four, yeah. [nodding]
8.	Ann →	[Mhm. Seven?]
9.	Bo	Hey, I, of course, this week is…
10.	Ann	(Smiles towards Bo)
11.	Cora	(Smiles towards Bo)
12.	Bo	It's two weeks from now that we have seven [booked].
13.	Ann →	(Smiles) [Seven.]That's done?
14.	Bo	Preliminarily.
15.	Ann	Sounds good.

```
1. Bo       Gaze: List on wall----------------------------
            Sign: I I POINT(Cora) ONE TWO THREE FOUR__ FIVE SIX__ SEVEN
            Trns: I,I, hey, It's one, two, three, four… five, six… seven.

2. Bo       Gaze: List on wall-----Cora-----------Ann-----------
            Sign: THINK DONE TAKE SEVEN___ NEXT WEEK SEVEN_______
            Trns: Think we already booked seven… next week seven…

3. Cora     Gaze: Bo-------------------------------------list on wall
            Sign:                                  (nodding)
            Trns:                                     mhm.

4. Bo       Gaze: Cora-Ann-----------------------------------------------
            Sign: BECAUSE OT[HER_____]
            Trns: Because the other…

5. Ann      Gaze: Bo-----------------------------------------------------
      →     Sign:(nod)      [NEXT WEEK?] WEEK FOUR TALK ABOUT? POINT(Bo)
            Trns: Mhm  Next week? Is it week four you are talking about?

6. Cora     Gaze: Bo------------wall--up- Ann--------------------------
            Sign:                 FORTY-FOUR_____
            Trns:                  Forty-four…

7. Bo       Gaze: Ann---------------------
            Sign: WEEK FOUR(nodding)
            Trns: Week four, yeah.

8. Ann      Gaze: Bo------------------------
      →     Sign:             (nod)  SEVEN?
            Trns:              mhm   seven?

9. Bo Gaze: Down------------------------
            Sign: I HEY HEY I OF-COURSE THIS WEEK
            Trns: Hey, I, of course, this week is…

10.  Ann    Gaze: Bo------------------------
            Sign:   (smiling)

11.  Cora   Gaze: Bo------------------------
            Sign:   (smiling)

12.  Bo     Gaze: down-Ann----------------------------------
            Sign: TWO WEEK AHEAD AHEAD SEVEN__ [TAKE]
            Trns: It's two weeks from now that we have seven booked.

13.  Ann    Gaze: Bo-----------------------------------------
      →     Sign:                 YES (smile) [SEVEN] DONE?
            Trns:                     Seven? that's done?
```

```
14.   Bo    Gaze: Ann------------------
            Sign: PRELIMINARY
            Trns: Preliminarily.

15.   Ann   Gaze: Bo--------------------
            Sign:              GOOD OUT
            Trns:              Sounds good.
```

In line 2 of Extract 8, Bo states that they have seven classrooms booked for next week. Cora (3) nods and gazes up towards the list on the wall. Bo (4) starts to say something about why this has been done ("because the other…"). Ann (5) first nods, but then initiates repair, overlapping with Bo's utterance by other-repeating "next week?" The other-repeat can pass both as a check of perception/understanding and as questioning the correctness of Bo's statement. In the second part of the repair-initiation (5), Ann requests confirmation of whether Bo is talking about week four. This repair-initiation is more clearly targeting a potential mistake by offering an alternative to "next week" (which would be week three). However, Ann is still not explicitly accusing Bo of misspeaking. (The others probably do not see Cora's utterance in line 6.)

Bo (7) confirms which week he is talking about ("Week four, yeah") and Ann (8) nods back at him again, but then produces a candidate offering repair-initiation with a partial other-repeat, saying "seven?" with her eyebrows raised, head poked forward, and no smile. It is opaque whether this is to be seen as another repair-initiation or as a pseudo-repair-initiation (Kendrick, 2015, p. 165; see also Schegloff, 1997), serving as a receipt showing that the prior trouble is now solved, as a prompt or cue for restoring the progressivity of the conversation, i.e. a "go-ahead" (Clayman, 2012, p. 157; Mondada, 2018, p. 97; Stivers, 2012, p. 194). The opacity concerns whether the change-of-state in Bo's next turn (9) is a result of Ann other-repeating the number of rooms (8) or a delayed reaction to her question about the week numbers in line 5. Bo (9) quickly withdraws his gaze, smiles, waves rapidly for attention and self-repairs, saying that week four is "of course" not next week, but two weeks ahead (12). There is no clear evidence of Ann's epistemic stance towards Bo's erratic referring to week numbers until after his self-repair in line 9 and 12. Both Ann (10 and 13) and Cora (11) smile towards Bo. This suggests that they recognize that Bo has mixed up the weeks. This can be seen as an example of the interactional advantages of self-repair over other-repair (other-correction) (Schegloff et al., 1977). Self-repair is generally less face-threatening towards the trouble-source utterer than other-correction. It is also face-preserving for the repair-initiator, as it enables them to act less intrusively by asking, rather than correcting the utterance. Ultimately, in such cases, other-initiation of self-repair allows for at least two possible face-preserving outcomes for the repair-initiator. If the repairable turns out to be correct, the repair-initiator cannot be held responsible for saying it is wrong. If the repairable turns out to be incorrect, the repair-initiator (and anyone else present) can join the mutual recognition of the mistake, even if they did not initially recognize it. This kind of

“hindsight bias” or “knew-it-all-along” effect (Roese & Vohs, 2012, p. 411) can make us recall something that was mere confusion, or even a non-reaction, as a quite certain suspicion that the other misspoke.

As the NTS data shows, candidate offer repair-initiations can target troubles of perception, understanding, and acceptability by addressing (suspected) errors in a mutually face-preserving manner. Candidate offer utterances can be treated both as repair-initiations and as displays of understanding. However, offering a candidate understanding repair-initiation is a “risky business” (Antaki, 2012, p. 531), as the repair-initiator cannot do this without also presenting their potentially incorrect understanding.

4. Quantitative distribution of formats and subtypes of repair-initiation

Table 1 presents the repair-initiations in the core selection from the NTS data. In accordance with the next-turn proof procedure, only other-initiations followed by self-repair are included. The self-repair occurs directly adjacent to the repair-initiation or following one or more subsequent repair-initiations.

Following the coding scheme from Dingemanse et al. (2016), the table draws a line across the continuum of referential strength (Kitzinger, 2013) and creates a distinction between open-class repair-initiations (OCRIs) and restricted repair-initiations. Repair-initiations that give no explicit guidance to the trouble-source speaker about the location of the trouble are listed as OCRIs, while those that do are considered restricted.

The presented OCRIs are divided into three subtypes: question word, non-manual and implicit freeze-look repair-initiation. The NTS data did not include any formulaic OCRIs (e.g. “excuse me” or “pardon”). Nor were any OCRIs formatted as explicit requests of repetition of the trouble-source, which are reported to be frequent among both second-language learners (Egbert, 1997b; Liebscher & Dailey–O'Cain, 2003) and practicing signed language interpreters (Llewellyn-Jones & Lee, 2009).

The table divides restricted repair-initiations into two subtypes: those that request specification and those that offer a candidate that calls for (dis)confirmation. Some of the candidate offers could qualify as candidate perception offers, as they are announced as and treated as being about perception rather than understanding (e.g. Extract 6, line 2, where Cyd’s gaze follows Bill’s sign). Usually, however, it is impossible to make such a clear-cut distinction, as there is no simple relationship between the type of repair-initiation and a specific kind of trouble (Drew, 1997). For example, a repair-initiation indicating trouble of perception can be treated as trouble of understanding (Svennevig, 2008). According to Dingemanse et al. (2015) it is useful to use tools like “the Austin/Clark action ladder” (Clark, 1996) to shed light on the level of perception/understanding that the recipient displays through the repair-initiations (Dingemanse et al., 2014). Still, it is often difficult or impossible to determine the kind of problem that a case represents, is announced as, or is treated as (Dingemanse et al.,

2015; Drew, 1997). This is what Sidnell (2011, p. 18) refers to as “the other-initiated repair problem”.

For these reasons the quantitative distribution (Table 1) treats all candidate-offers as one subtype.

Table 1: Quantitative distribution of formats and subtypes of repair-initiation in the NTS data. (All percentages have been rounded.)

Explicit/implicit	Subtype	n=112
Explicit	Non-manual	10 (9%)
Explicit	Question word (what)	1 (1%)
Implicit	Freeze-look response	28 (25%)
Total open-class repair-initiations (OCRIs)		39 (35%)
Explicit	Request for specification	10 (9%)
Explicit	Candidate offers	63 (56%)
Total restricted repair-initiations		73 (65%)

Table 1 shows a total of 112 repair-initiations in the core selection, retrieved from 60 minutes of NTS conversation. This gives an average of one repair-initiation every 32 seconds. This overall frequency is identical to that found in LSA (Manrique, 2016), and more than double the one per 1.4 minutes frequency reported in a comparison of 12 different languages (Dingemanse et al., 2015; Enfield, 2017). This suggests that the frequency of OIR in these signed languages is generally higher than (most of) the spoken languages studied, but this might not be due to differences between languages or modalities. Even though the video data collected in the different languages were commensurable in the sense of being informal conversations between friends and relatives, conversations can contain radically different numbers of repair-initiations. Among the six different ten-minute extracts in the NTS data, the number of repair-initiations varies from nine to 30. In addition, repair-initiations are not evenly distributed along the timeline of a conversation. In the NTS data, a large portion of the repair-initiations are grouped together in multiple OIR sequences (Schegloff, 2000), consisting of upgrades and multiple attempts to restore progressivity (Skedsmo, in press).

Nine of the articles in *Open Linguistics'* special issue on OIR (2015/2016) present the numerical distribution of OCRIs versus restricted repair-initiations in their data (Baranova, 2015; Blythe, 2015; Dingemanse, 2015; Enfield, 2015; Gisladottir, 2015; Kendrick, 2015; Levinson, 2015; Manrique, 2016; Rossi, 2015). A comparison of these findings shows that the percentage of restricted repair-initiations varies from 56% in Yélî Dnye (Levinson, 2015) to 80% in Lao (Enfield, 2015), with an average of 68%. LSA has 58% (Manrique, 2016), while NTS has 65%.

There is greater variation across the languages in the distribution of subtypes within the open and restricted formats. While Murrinh-Patha (Blythe, 2015) shows an equal number of requests for specification and candidate offers (both constituting 33% of the total repair-initiations), all other languages showed a preference for candidate offers over requests for specification. The most salient difference is found in LSA (Manrique, 2016), with 51% candidate offers and 7% requests for specification. This is quite congruent with the NTS data, in which the corresponding percentages are 56% and 9%, respectively (Table 1).

The implicit freeze-look repair-initiation found in LSA, NTS and under the name "freeze-display" in spoken interaction (Oloff, 2018) is not attested in the other nine languages studied in *Open Linguistics* (2015/2016), with the exception of one case in Yélî Dnye (Levinson, 2015). The freeze-look repair-initiation stands out, as it is constituted by a notable absence of action. This is a major reason why it defies comparison with any of the categories used in the cross-linguistic coding scheme (Dingemanse et al., 2016).

As Table 1 shows, the largest group of repair-initiations in the NTS data are the restricted repair-initiations, of which candidate offers are the largest subtype, accounting for more than half of the total cases.

5. Concluding remarks

From the few studies available, it seems that "freeze-look" in signed languages and "freeze display" in spoken language (Oloff, 2018) are similar practices. While freeze-look fits the preference of upgrading to more referentially restricted formats (Schegloff et al., 1977; Svennevig, 2008), Oloff (2018) observes that freeze displays frequently occur as subsequent repair-initiations, and constitute "referential downgrading". Further research into embodied repair initiations in signed and spoken languages is necessary to build an understanding of the potential differences between languages and modalities, but also to search for similarities and to acknowledge the visual, embodied parts of communicative interaction, regardless of language and modality.

Within the field of other-initiation of repair in NTS, there is a need for further research based on cases in which OIR-sequences occur subsequent to interlocutors missing a part of the conversation. In spoken conversation, looking at one's food, phone or another person does not prevent interlocutors from perceiving utterances. In signed interaction, looking in one direction severely inhibits perception of what is being signed elsewhere. The NTS data includes OIR-sequences that seem to occur due to the repair initiator being engaged in alternative conversation or conduct (e.g. Extracts 3, 5 and 7) without this reason being explicitly addressed. Further research is needed to understand how signers navigate in (multiperson) conversations and how they relate to parts of the conversation that they do not perceive.

This study has shown that NTS signers dealing with troubles of signing, seeing, and understanding to a large degree employ formats and subtypes of repair-initiation

comparable to those used in spoken languages. Among the areas that need further investigation for continued comparison are embodied repair-initiators employed in spoken language interaction, both through explicit non-vocal gestures and implicitly, through freeze displays or other possible practices. In the field of gesture studies and embodied communicative practices, studies of interaction in signed and spoken language can be mutually enriching (Goldin-Meadow & Brentari, 2017).

The overview and discussion of formats and subtypes of repair-initiation in this study show that also users of NTS also employ the implicit freeze-look repair-initiation that has been observed following questions in LSA (Manrique, 2016; Manrique & Enfield, 2015; Manrique et al., 2017). In NTS, this subtype of open-class repair-initiation targets not only questions, but also other first-pair parts, and even second-pair parts, e.g. answers.

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Supplementary Material

Informed consent (in Norwegian)
Coding schema for individual repair-initiations

Overview of abbreviations used in the article:

CA	Conversation Analysis
FPP	First-pair part
LSA	Argentine Sign Language (Lengua de Señas Argentina)
NTS	Norwegian Sign Language (Norsk tegnspråk)
OCRI	Open-class repair-initiation
OIR	Other-initiation of self-repair
SPP	Second-pair part

Overview of transcription conventions

GAZE-TIER (UPPER TIER)

Name------	Interlocutor is gazing towards another person for as long as the dashes show.
Direction-----	Interlocutor is gazing in the direction noted. Directions are e.g. down.
Shut-----	Interlocutor is closing eyes more than a brief blink.

SIGN-TIERS (SECOND TIER FROM TOP OF EACH SECTION/LINE):

→	Points towards repair-initiator (Marked with A and B in cases of upgrading before any self-repair is produced.)
SIGN	Sign from Norwegian Sign Language glossed as English word in un-inflected form.
SIGN(neg)	Negation (head-shake) added to a sign.
…SIGN	Hesitation/false start before sign.
POINT(Name)	Pointing towards another interlocutor, or to indicate references like "them", "there" etc.
I	Pointing towards self.
(1.3)	Pause, measured in seconds and tenths.
[angled brackets]	Showing simultaneous signing.
SIGN_____	Turn-final holding of last part of sign.
(action)	Nodding or other non-manual actions.
SIGN!	Emphasized pronunciation of sign.
SIGN?	Question-marked pronunciation (eyebrows lowered or raised).
CA	Constructed action (Gaze withdrawn, acting out actions, utterances, feelings and/or attitudes).
400 (number)	Large numbers are notated numerically to save space, as pronunciation, number of syllables etc. is not relevant.
FL (0.7)	Freeze-look response for 0.7 seconds.
SIG*	Aborted sign (Translated as "Sig…").
W-O-R-D	Fingerspelled word.
(CL:)	What comes after this is produced with classifier signs. (A hand-shape represents an entity, or the handling of one, and the hand's movement represent the actual or methaphorical movement of that entity.)
SIGN(left-forward)	The sign is produced with a movement from left side and forward

Grey background shows lines occurring simultaneously, to display gaze, overlapping signing etc.

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[i] "Norsk tegnspråk." Abbreviations referring to signed languages, even if presented in English or other lingua francas, are conventionally based on the name of the language in (one of) the written languages used in the same area. Argentine Sign Language is called LSA (Lengua de Señas Argentina)). The exceptions to this are signed languages in areas that do not use the Latin alphabet, like Russian Sign Language, abbreviated RSL.
[ii] The coding scheme, along with the consent form, are available as supplementary material.
[iii] Ben's schisming question to Carl about what Abe and Finn are talking about could be considered a kind of "third-party repair-initiation". This way of appealing to a broker (Greer, 2015) is discussed in Skedsmo (In preparation).
[iv] Both "Pascale" and "PayPal" are pseudonyms for another name and another money transfer service, made up to look like each other. This is done because I suspect Ben is confusing the two, as they look rather similar when fingerspelled.