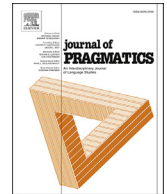


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Meaning-making in tactile cross-signing context

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ABSTRACT

Cross-linguistic studies of tactile sign language are still not widely performed internationally. For this study, four deafblind informants in two different tactile sign languages, Swedish Sign Language and Norwegian Sign Language, participated in the recording at a social and cultural workshop where they worked together to create a mutual understanding in their conversations. The study provides new information on how tactile and bodily signals are incorporated in dialogues where the speakers are not familiar with each other's signing. The results illuminate various tactile communicative strategies used in negotiating in cross-signing dialogues. By the selected analyzed examples, this study contributes to knowledge of how language and interaction skills are brought into the process of understanding each other, despite linguistic barriers.

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1. Introduction

Swedish and Norwegian spoken languages share several linguistic and cultural similarities, making the languages mostly mutually intelligible. The languages have similarities in terms of pronunciation despite several differences in vocabulary (Delsing, 2005). When it comes to Swedish Sign Language (svenskt teckenspråk, STS) and Norwegian Sign Language (norsk tegnspråk, NTS), these two languages differ more (Bergman and Engberg-Pedersen, 2010; Ferrara et al., 2022). The languages do not share initial signs, the hand alphabet is not the same and much of the sign vocabulary differs. Historically, NTS is related to Danish Sign Language, while STS has similarities to Finnish Sign language (Haualand et al., 2021; Michelsen, 2022). When it comes to tactile sign languages, they have their origin in visual national sign languages.

Tactile signing communities are found among signers with acquired deafblindness, who have transitioned from being a seeing person to becoming blind and have experienced the need to change communication from a visual to a tactile way due to increasing visual challenges. There are deafblind-led associations in Norway since 1957 and in Sweden since 1959, working on raising more focus on the needs of these groups and providing social and interest groups for these communities. Leaders of the Nordic associations for deafblind persons participate in annual meetings, focusing on political understanding and promoting the rights to inclusive services for deafblind persons. However, there are not many social or cultural arenas between deafblind signers in these two countries or internationally.

The present study addresses Swedish and Norwegian deafblind people's interaction and explores a cross-signing genre in the tactile modality. By using conversation analysis (Sacks et al., 1974; Schegloff, 2007), interrogative sequences with question-answer sequences in their talks were found as a typical adjacency pair for meaning-making. The first action (the first

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adjacency part) is seen performed as a turn by one interlocutor, followed up by the other interlocutor's answering turn (the second adjacency part). In conversations, the situations of interaction are activities open for a moment-by-moment consideration for the next step. Conversations are actions performed in a context and are interactions available for adjustment happening then and there. This study takes inspiration from the methodology of CA and the insights from studies on multimodality (Mondada, 2016), it focuses on the negotiation process seen in sequences identified as interrogatives in some selected conversations. The multimodal approach focuses on movements, orientation, and all expressions able to be studied from the videotaped signing material. A research question for this study is: *How do deafblind signers from two different tactile sign languages make meaning in a cross-signing context?*

1.1. Cross-signing in sign languages

The material of this study is communication between signers across different national languages, where there are arrangements for some shared experiences and activities that will possibly be positive factors for making references for building mutual understanding. International studies of meetings among the deaf in global settings have described meetings arranged among signed people as settings for transnational relations (Breivik, 2005; Hodge and Goswell, 2021). Communication in such a setting has been characterized as a decisive effort to establish contact and build on shared experience (Kusters, 2021). Byun et al. (2018, pp. 315) refer to “cross-signing” as “signed interactions, where communication emerges ad hoc between individuals without a shared language.” Translanguaging is another term for the concept of the way language users with a background in a different language meet and how this influences their language use (García and Li, 2014). Translanguaging may then be a process where you bring in all your language resources to communicate together more effectively (Green 2014).

From Byun et al. (2018), some of the strategies seen in visual cross-signing are on the interlocutor's awareness of the metalinguistic process they are involved in, seen as the tendency of reducing speed and repetition of signs, and marked by conversations with increased use of eye-contact, the tendency of holding eye contact and the signs for a longer time, and the use of repetition of central terms in utterances. In case of misunderstanding, there is a command strategy by the listener to repeat the trouble source or the part of the sentence not being understood. Mutual attention does prepare for early intervention to conversational repairs when episodes of lack of understanding occur (Byun et al., 2018).

De Meulder et al. (2019) and Byun et al. (2018) point to the competence participation belonging to national minority signing groups having a basic knowledge of adjusting their communication to be understood by the majority spoken society. Exposed to asymmetric communication situations, motivation for taking part in communication with “someone-like-me” is characterized as high. A specific motivation and awareness may be related to identifying issues and identification when meeting others skilled in the communication of their modality (Miner, 2008). Moriarty and Kusters (2021) have documented how transnational signing meetings create situations where those meetings bring in skills and adjustment, benefitting from manual-visual components from their first languages. The term calibration is used for the process when deaf are cross-signing in transnational meetings or signers are talking to those who might not be fluent users of the national sign language. Moriarty and Kuster (2021) have pointed to how adjustment and calibration of the signing may be useful in constructing a command form of making meaning and to help reduce misunderstanding. The development of shared semiotic codes and linguistic competencies in cross-linguistic contexts for deafblind persons has not been given much attention as yet (Rocketship et al., 2022). Transnational meetings for tactile sign language users are rare and do not have a long tradition and are not yet receiving attention as a research topic.

1.2. Interaction in tactile sign languages

When dependent on communication in tactile modality, visual cues are challenging for tactile signers, where access to other semiotic resources such as mouthing, eye gaze, or facial expressions are unavailable. Research on tactile sign language has been conducted on language use and how deafblind partners in conversations construct meaning when holding on to each other's hands during the signing. However, these studies are only about “national” tactile sign languages (for an overview, see Willoughby et al., 2018). Research on tactile signing conversations has identified the following parts as important to address regarding deafblind persons' access to dialogues: turn-taking, interrogatives, backchanneling, and environmental information.

When deafblind interlocutors use tactile sign languages, they are holding each other's hands, and through tactile modality, the signers use varied sources of communicative signals available through touch. The tactile modality opens ways to understand multimodal aspects of communication, where a mode is understood as “a semiotic resource with a certain regularity of use for communication,” as defined by Bezemer and Kress (2014, p. 78). The language modality in use has been considered to have several layers of semiotic function, including interpersonal and textual meaning, both “to be able to convey meanings about the social relations of those who are engaged in interaction” and a focus on “the goings-on” (Bezemer and Kress, 2014, p. 78). As natural languages in use, research on tactile conversations show how Bezemer and Kress's perspectives on how both interpersonal and textual constructions are supported and formed in conversations in the tactile modality.

In signed languages, interrogatives are typically realized by non-manual markers such as raised or furrowed brow, head forward, or head backward and the use of question signs, where some of these signals are not accessible to a deafblind person. In tactile modality, there may be a risk of misunderstanding the question constructions when those involved in the interaction do not see each other, and therefore the level of adjustment is an essential issue in tactile language use (Mesch, 2001;

Willoughby et al., 2014). This makes the research topic in this study of importance to contribute to a further understanding of how requests for information are expressed and how responses are adjusted to the tactile modality. A signal for questions found in earlier studies in tactile sign languages is a pointing gesture that the signer directs to their addressee. If the pointing gesture is held for a longer time, this is often part of a question, and a clear signal that “a question is being asked” (Mesch, 2001; Raanes, 2006). For example, a question may end with a gesture of turning one or both hands into a gesture palm-up; a gesture may be interpreted as an invitation to a turn-shift to make the interlocutor's opinion a focus. When the interlocutors do not have access to eye gaze, voice intonation, or facial expressions, a pointing gesture may be marked by the movement in the sign, changing from movement to a freeze. This may be a marking and emphasizing of the message. Collins (2004, p. 29) argues in his study of tactile ASL (American Sign Language) that increased pointing towards the interlocutor in combination with *wh*-questions functions as “a substitute for the signer's eye gaze”, where the pointing sign ‘you’ gets the addressee's attention and informs this person that something will be directed towards them.

Giving a response to ongoing communication is essential to ensure that the communication process is a shared activity between the interlocutors (Manns et al., 2022). Backchanneling response signals may be expressed by head nods, head shakes, eye movements, or various hand gestures. However, due to deafblindness, several of these essential signals of response may be difficult to perceive, and adjusted variants of back-channeling signals are developed and adapted to a tactile and kinesthetic mode (using touch as well as body positions and orientations). Among the most described responses and minimal signals in tactile signing are the light tapping at the interlocutor's hands indicating attention to the ongoing talk. The light tapping signal may also be a sign of agreement, as the light strokes with one hand done on the interlocutor's hand may signal “no” or “disagreement.” In addition, several studies on tactile signing conversations document a variety of location and performance signals of minimal response, where the articulation may be on the other's hands, arms, shoulders, knees, or feet (Edwards, 2012; Mesch, 2013). Note that tapping tactile signals for “yes” and stroking movements for “no” seem conventionalized in several tactile sign languages worldwide (Willoughby et al., 2018). Such signals have also been pointed out in historical documentation of deafblind communication (Keller, 1864). This area of tactile signing awareness by involving bodily signals is today supported by deafblind communities in Scandinavia, the US, and internationally. New practices in how the whole body may function as a place for response and language signals and environmental descriptions (Gabarró-López and Mesch, 2020) are seen in the development of haptic signals (Lahtinen, 2008; Raanes and Berge, 2017) and protactile communication (Edwards and Brentari, 2021).

2. Method

The data analyzed in this study were extracted from the project concerning two unrelated sign languages and involved cross-signing between peers of Norwegian and Swedish tactile signers (Raanes and Mesch, 2019). A cross-linguistic environment for the deafblind signers participating in a cultural event is arranged to obtain empirical data on how deafblind signers work on understanding each other. The participants in the data recording were two deafblind informants from Norway and two from Sweden. The mean age of the deafblind informants was 59, ranging from 50 to 76 years old. All had a long experience of sign language usage and had switched to using tactile sign language due to increasing sight problems. However, the Norwegian and the Swedish participants were new to each other when they arrived for three days of data collection.

During the event, the researchers were present and made observations and field notes. Recordings for interactions in tactile sign language were made with one to five cameras in use. A part of 26 raw hours of video-recorded interactions was selected, and we focus on 1.5 h of video cross-signing recordings, including conversations from the first and the last days of the cross-signing arrangement. Early in the arrangement, the participating Norwegian and Swedish tactile signers were facilitated to meet and introduce themselves, and on the last day of their meeting the participants were more familiar with each other and they talked about shared activities they had been involved in – a guided visit to an old cathedral and making stone carvings of copestone in the same type of stone they had touched at the cathedral. The collective knowledge they shared may be of significance in their understanding of each other despite different language backgrounds. The video material used for this study is all from direct cross-linguistic interactions between the Swedish and Norwegian deafblind participants and does not include interpreter-mediated talks.

As a starting point in our analysis, we began to analyze reactions to understanding seen when a question was asked. By identifying some of the interrogative sequences of the selected material of conversations, we expected to be able to analyze if the response due to CA seemed relevant due to how meaning seemed to be made at these points in the conversation. Could we, based on the way the conversations progressed, see if there was a following up of the actions to seek information by a coherent reaction to the request? Examples from these interrogative sequences will be presented in our findings. To analyze the strategies for expressing multimodal interrogative structures, we need to operationalize our understanding of “a question.” Building on Linell (2009) we searched for actions to seek information or to order a response during conversation. The selected data were transcribed and annotated using the multimodal annotation tool ELAN (ELAN 6.4 [Computer Software], 2022). In the transcripts, the informants are anonymously presented as Siri, Sue, Niels, and Nina, where the first letter in the anonymous name indicates the Swedish or Norwegian participants. Figures made of drawing from our data are made from video clips of actual sections of data.

3. Findings

The deafblind signers from Norway and Sweden had several strategies to establish intersubjective attention and understanding during a selection of conversations where they were seeking information from the other. In the cross-linguistic conversations, we found the use of various strategies used for making the conversations run between them while not sharing the same language. These findings will be divided into four main categories:

- 3.1 The tactile interaction
- 3.2 Contextualized meaning-making
- 3.3 Negotiation in interaction
- 3.4 Using multimodal resources in the interaction

3.1. The tactile interaction

Deafblind signers establish intersubjective attention in their processes of ensuring a flow in their interaction. The modality of tactile sign language communication gives access to the constantly produced signals of attention and backchanneling through the contact between the hands. For tactile signing, previous research (Mesch, 2001; Raanes, 2006) has documented the following variations of touch and hand movements are involved in tactile signing in TSTS and TNTS:

- The grip of the hands
- The positions of the hands and arms
- Interactions in carrying out movements in the signing space
- The intensity of holding the hands
- The orientation of the hands

When tactile signing, there is contact between the hands, and there is a need to interact to make one's movement follow the other's movement in signing and finding the place to position the hands to talk. The attention to lead and move your own hands in ways possible for the other to follow is a dialogical tactile process. There is an underlying response in this interaction of following and taking part in the movements initiated and shared in the tactile modality, which may be sensed as the tactile way of tracking the activity of the other – as a parallel awareness that eye contact may serve as to. The proximity between the interlocutors supports the attention to the expressions accessible by movements. The contact point between hand and body gives signals of the intersubjective attention between those interacting.

In the data, several variations in visual signals in the face, nodding, and mouth movements are observed during the interaction. Together these communicative strategies are observable in the conversation material, and make clear the topic (the goings-on) together with signals for the social interaction between those in interaction (Bezemer and Kress, 2014:78).

The way the interlocutors use physical contact between their hands may be the starting point for turn-taking when they are meeting for the first time. The first example is from a two-handed talking position, a position most used in TNST.

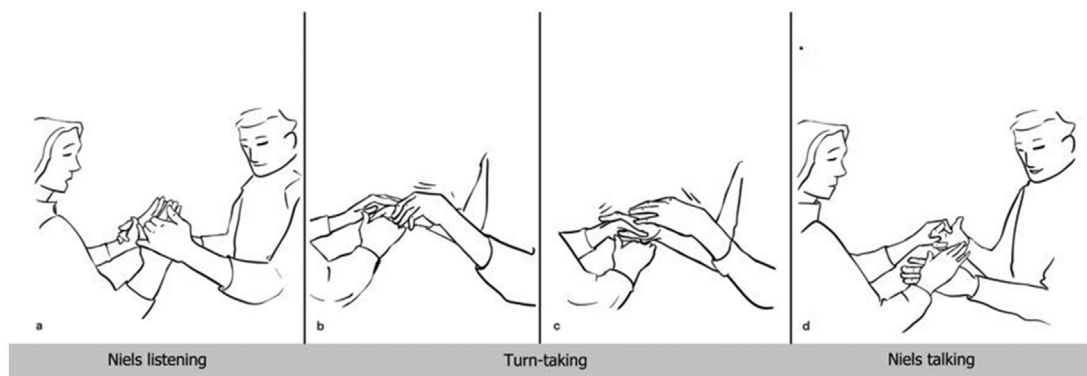


Fig. 1. Touch and hand movement in turn-taking.

Fig. 1 shows how Niels (signing in a two-handed position) responds to a question by giving some information. The listener Niels (the person to the right in Fig. 1a), is keeping his hands tight and close to his interlocutor Sue's hands. His touch is indicating close tactile attention to her signing, seen in the way he is holding on to feel all her finger movements and position

following her signing. A turn-taking process is seen in Fig. 1b and c, where Niels lets go of the physical contact between their hands, moves his left hand toward himself, and then leads both his hands under Sue's hands indicating a turn shift. Simultaneously Sue's hands are slightly rotating to a position, where she keeps her hands on top of his hands – in a transition from a position of speaker into a listener's position (completed in Fig. 1d). The process from 1a-d runs smoothly and quickly – making a transition where they undergo tactile turn-taking by changing hand positions, where they change to a position for Niels to answer.

The touch used by Niels in Fig. 1a is done with a very strict hold indicating close attention to every of Sue's finger positions and movements. In this first conversation between them, they adjust to a two-handed conversation form of touch and movements (even if they are from a two-handed vs a one-handed tactile sign language) and done in a way they take their time to be sure to receive each other's contributions to their talk. This close attention seen in Fig. 1a may indicate an adjustment to the interaction where they not are familiar with each other and are influenced by the cross-linguistic situation. Later in the arrangement, Niels touches Sue's hands holding with a lighter touch, where his hands are placed closer to Sue's wrist.

The transition into turn-taking in *one-handed tactile signing conversations* looks a bit different. In Fig. 2, the lady to the right has a turn and signs with her right hand as her dominant hand. The lady to the left is listening, while she is searching up to find her interlocutor's hand to sign her wish to take a turn, using her right hand to signal this.

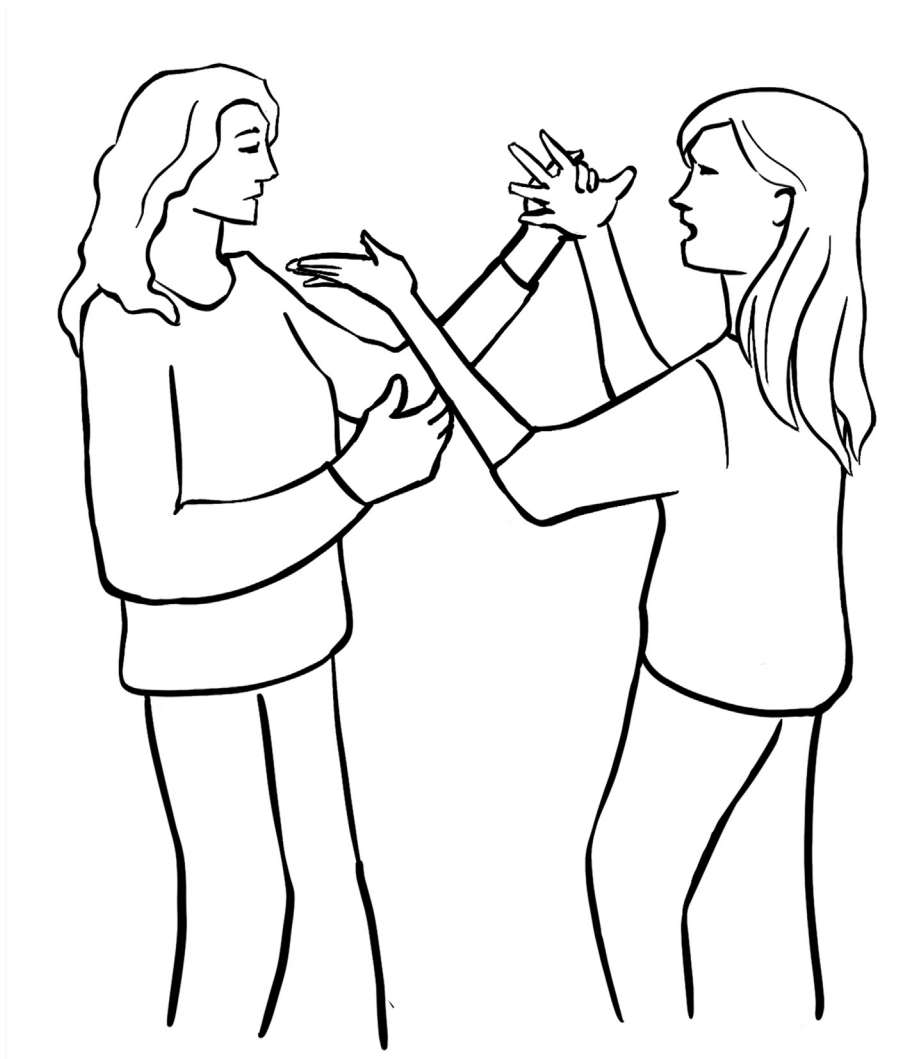


Fig. 2. Signals of turn-taking in one-handed signing.

Due to the standing position, the turn-taking and orientation toward each other give some alternative ways to mark the transition by letting the hand contact end. Tactilely this signal may be performed as a minimal response (from the listener lifting her arm to touch the other's arm), while at the same time this may be a starting point of a transition into the process of

finding the interlocutor's arm and leading their hands into a turn-shift. In Fig. 2, the linguistic background may be influenced by their different experience of signing tactile with one or two hands involved. The signer to the right is not familiar to register turn shift signals with just one hand and needs a signal also performed onto her left hand to recognize the wish for a turn shift. They will have to be adjusting to how to keep contact in one-handed tactile sign language is a new technique for one of the interlocutors in this conversation.

These two examples show that tactile signers have close contact with each other through their hands with proximity between their bodies. There will during conversations be some direct access to each other's bodily response through legs, feet, hands, and fingers, and where the interlocutors may follow the other's multimodal body movements with their bodies. This gives several simultaneous and immediate inputs for noticing responses and reactions from the other.

The minimal response signals such as tapping onto the interlocutor's hands (or knee) are frequently used in the studied conversations, used as signals of backchanneling or as a way to indicate turn-taking (e.g., Mesch, 2001). The tapping signal may be done with a flat hand, with spread fingers, or one, two, or more fingers. By holding on to each other's hands, all signals follow a timing and a moment-by-moment readiness of perceiving and understanding or responding. In cross-linguistic contexts, the need to assure that the connection to the signing is clear may be increased and embodied supported back-channeling signals is an important resource for the interlocutors. During conversations, the interlocutors have direct access to each other's bodily responses through knees, legs, feet, hands, and fingers and can follow the other's multimodal body movements with their bodies. The timing and the intensity of backchanneling signals will be of importance to maintain a communicative flow in the interaction and in the process of ensuring joint understanding. Iwasaki et al. (2019) have describe these signals in Australian tactile sign language.

3.2. Contextualized meaning-making

Pointing may be a marker for bringing attention toward a referent. Pointing may be challenging to use when not able to see one's environment, and there is a need to clarify who, where or what the pointing refers to. In situations where a deafblind person is not familiar with the situation or with the persons, the hands, or the communication with the other, this may be further problematic. From the conversation between Sue and Niels, there occurs some confusion to be handled. Sue and Niels have been guided to a table to sit down and talk about reflections on the day's activities. Sue is the one to start to talk, but Niels breaks in by taking a turn to clarify an important point: "Whom am I talking to?".

Extract A.

01 Niels ASK POINT:YOU WHO NAME SUE (Sue's name sign) POINT:YOU

I must ask, you are Sue, right?

In Extract A, Niels raises a question to Sue by pointing toward her. The transcript of Niels's question shows that pointing towards Sue marks her as the addressee, POINT:YOU, with a pointing sign he is moving his right index finger in her direction. As seen in line 01, he uses the sign POINT:YOU twice, as he repeats the sign at the end of his question – pointing forward to a light touch on Sue's chest. This pointing variation towards the interlocutor is done with a duration/freeze. The duration of the sign held towards the interlocutor underlines the function of the request. The two of them have met, but they are not so well known that Niels by touch recognizes his interlocutor's hands or other touchable characteristics at once. Also in a later conversation, the pointing reaching forward to touch the other is used. This time it is Sue that points toward Niels, but in Fig. 3 within another context.



Fig. 3. Pointing "you" addressed with physical contact.

Both in Extract A and Fig. 3 there are adjustments to clarify the addressee for the pointing, with repetition, duration of the sign, pointing with physical contact between the pointing sign and the reference, ensuring the pointing signal is clear. The pointing going all the way into touching the other's chest is a specific sign known by several tactile sign languages (e.g., Mesch, 2001; Raanes 2006).

Extract B is from a discussion about some stone carvings Nina and Siri have worked on, and they are now showing the products to each other. Siri wants to know what Nina plans to do with her stone piece when arriving home. The actual square stones are close to where they are seated, one stone at the table (Nina's stone) and the other stone in Siri's lap. When Siri asks about something related to the stones, her pointing varies from pointing at the stone placed in her lap (her carved stone) to the stone placed at the table (Nina's carved stone):

Extract B.

- 01 Siri POINT:ME THINK POINT:STONE
I wonder about this stone
- 02 Siri HOME HOUSE POINT:YOU (touching Nina's chest) LIVE HOUSE
When you are back home,
- 03 Siri POINT:YOU HOUSE PUT POINT:STONE-ON-TABLE WHERE
where are you putting this stone,
- 04 Siri POINT:YOU PUT WHERE POINT:YOU HOUSE LIVE PU
where do you think to put it at home?
- 05 Nina (answers the question)

Extract B shows a turn pointing toward the artifacts (the stones) that is important in building up the understanding of the direction of Sue's new topic and question. The transcript shows how Siri's question starts with pointing toward herself, transcribed as "POINT:ME" when she starts lining out that she has something to ask: "I wonder ..." (in line 1) before she makes another pointing – this time toward the stone placed in her lap: "I wonder about this stone...". Her utterance indicates an interrogative structure. The stone is the artifact brought into their discussion.

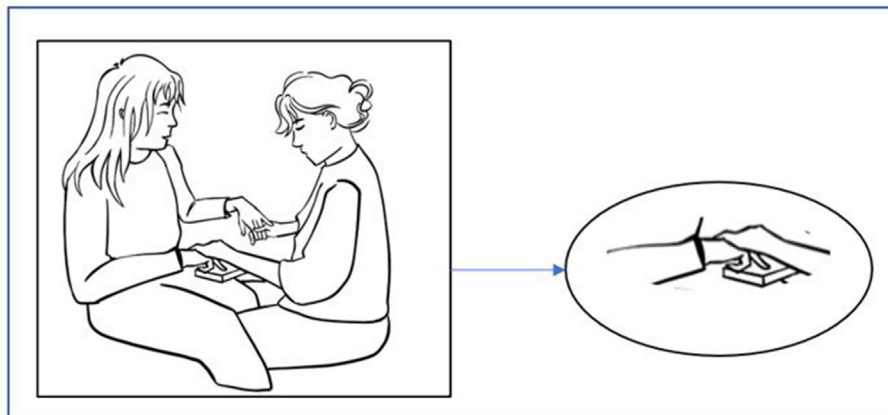


Fig. 4. Shows this pointing POINT:STONE toward Siri's carved stone.

Nina, her interlocutor, pays attention but does not take a turn or respond. Siri has in mind a request for some specific information, and she continues her question to Nina when she in line 3 is pointing to her interlocutor (POINT:YOU) and then moves her body position and hand pointing toward the direction of another present artifact being Nina's carved stones (POINT:STONE-ON-TABLE). In line 4 using a complex structure, Siri has built up her question, including repeated pointing signs clarifying who Siri asks to answer (POINT:YOU).

The various pointing transcribed in Extract B is done in ways adjusted due to their function in the interrogative constructed in this context, as when Siri in line 1 is pointing to an artifact (seen in Fig. 4). In line 02, Siri uses a variation on tactile pointing; with her index finger, she points directly forward and touches Nina's chest. This way of clarifying the

addressee of the message is indeed implicit. Such pointing is calling for the other to give a response, but still, not enough information is presented to make any answer. In line 03, Siri continues to point toward Nina, now connected to the place “your home”, and then points to the other stone available – Nina’s carved stone lying on the table beside them. Siri’s pointing toward this other artifact involves leading the other’s hand and body in the direction of the table to refer to the direction of the pointing signal. Nina continues in line 04 by expressing the question sign WHERE. The interrogative is built up with a meaning involving “carved soapstone”, “you”, “your house”, and the pointing in the direction of the artifact “Nina’s stone placed at the table next to them”. After four sections, the question takes form with the object, the place, and the action clarified, and Siri ends her question in line 04 by pointing toward Nina – the addressee for her question, and by signing a “palm up – gesture”, a commonly used sign as a marker of a question. This completes the presented question on a specific theme, “where will the stone be placed when you return home?” Nina’s response is clear – she takes a turn and answers.

The interrogative structure we see in Extract B is complex and is built up during a longer turn. Bringing in pointing toward artifacts to express meaning in these constructions of the question effectively results in Nina taking a turn and directly continuing with an adequate answer. Extract B is from a conversation recorded as one of the last during the data collection when the participants have started to adjust to each other’s ways of communication. Here they succeed in their communicative project, involving both shared knowledge and hypothetical action in the future.

Depicting signs are used often for describing objects or actions in sign languages. Depicting signs is described in tactile sign language examples by Mesch et al. (2015). Because the interlocutors are using fewer lexical signs, fingerspelling, and mouthing, to handle their difference due to vocabulary in STS and NTS, contextualized depicting signs are taken into use. Other terms for signs that describe objects or actions are depicting or constructed action. In one of the early talks in the data, Sue and Niels introduce themselves and talk about how they have experienced their increased visual problems. Niels asks Sue if she had sight when she was younger. It is Sue that in this part of their talk is using the depicting signs presented here, in Figs. 5 and 6. In the talk, the beginning of increasing visual problems is a topic:



Fig. 5. When you were growing up.

In Fig. 5, Sue answers by referring to a period – when she was growing up. Her sign starts with holding her hand flat in the lower part of her signing space before raising the hand straight up in front of her. With her hand, she is referring to adulthood, from being a little person to growing up. In this context, it is both referring metaphorically to the time going on, and to the little girl she was and her development into an adult. As an adult, her vision started to change. With the depicting sign in Fig. 5, Sue has made the time for when she experienced a reduced vision to be “when she was growing into adulthood”. In Fig. 6, the interlocutor invites to investigate Sue’s sign to describe how her sight has changed to a reduced field of vision.



Fig. 6. Reduced field of vision.

A command condition to cause deafblindness is an eye condition leading to a reduced field of vision. In Fig. 6, Sue responds to Niels' question using a depicting sign with both her hands in a movement, which indicates an area from a wide to a smaller area (with her hands and fingertips oriented outwards, moving her hands together, and ending the sign in a short freeze). Simultaneously, her upper body and head move a bit forward following the movement of her hands. This depicting sign refers to how she has lost her vision over time. Her sign refers to a condition also well-known to her interlocutor, progressive vision loss, and Niels gives his response by light tapping onto her hands as a confirmation.

3.3. Negotiation in interaction

There are several examples of repetition during the talks. As already seen, when Niels in Extract A in his short question repeats the sign POINT:YOU, when he wants to clarify whom he is talking to. Extract A: "01 Niels: ASK POINT:YOU WHO NAME SUE (Sue's name sign) POINT:YOU". The central meaning in his request for information is who are "you", and he repeats this central point of meaning. By repetition of the sign POINT:YOU, he is framing that this about her sitting in front of him – "I must ask, you are Sue, right?"

In another talk, there is a challenge when Nina and Siri are talking together. In this cross-signing situation, the problem arose in relation to the Norwegian sign GARDEN. Nina uses this sign, but Siri does not share or understand the sign. Extract C starts when Nina has taken a turn and started asking a question where she wants to know if Siri lives in a house with a garden – the question ends with the Norwegian sign for GARDEN, Nina line 01. Nina has not completed her question before Siri interrupts to clarify. Siri (in line 02) uses a blend of lexical signs of Swedish Sign Language (STS), and Norwegian Sign Language (NTS), but also some depicting sign and context-based sign (DS) See language tier below transcription in Extract 3 to illustrate the way the cross-signing is performed.

Extract C.

01 NinaGARDEN NTS
01 Siri	WHAT WHAT SIGN-GARDEN WHAT POINT SIGN-GARDEN WHAT STS STS NTS STS pointing NTS STS <i>Which sign is "garden"? What is it?</i>
02 Siri	UNDERSTAND NOT POINT:ME DS STS pointing <i>I don't understand.</i>

In lines 02 and 03, Siri expresses her need for a clarification of an unfamiliar sign. Siri's repetition in line 02 involves introducing that she has a question (the Swedish question sign WHAT is expressed twice) before she repeats the problem source – the Norwegian sign GARDEN– she continues in line 03 by summing up her confusion with a depiction sign (DS) in a gestural way of signing: "I don't understand." Nina and Siri are in the process of making a new topic shared, and they actively take into use discourse techniques by taking turns clarifying, and this is done with repetition and question signs. Siri's reproduction of the sign is precisely done, but the sign's orientation, movement, and articulation may be like other Norwegian and Swedish signs as well – as "flower" or "many". Siri's quick response is to make clear that in this context she does not understand this sign – GARDEN (from line 02 in the extract) – before she adds her confusion (in line 3). When Siri takes turn to clarify, her Swedish sign WHAT is clear, and she even repeats it, but the question sign she uses in the tactile version of STS is not the same as the Norwegian question sign "what". They struggle to understand each other.

Cross-linguistic situations, where the interlocutors are new to each other often involve a process to assure having a mutual understanding of the topic and context when starting a new theme. In Extracts B and C, repetition of signs was used in such a process. But also, a prosodic way of constructing interrogatives into sequences is seen in our data – as a way of building up to a

joint awareness and expressing a wish for some specific information, building up a question section by section. In Extract D (from the first day when Niels and Sue met), Niels is forming his question introduced as a series of more minor sequences to present and build up joint attention to his topic. Niels wants to clarify that he has a question for Sue; it is not about something here and now, but before. Step by step through several points, he asks Sue a question about her ability to see signs when she was a schoolgirl.

Extract D.

01 Niels	POINT:YOU BEFORE <i>Before did you</i>
02 Niels	SCHOOL SCHOOL POINT:YOU <i>When you went to school</i>
03 Niels	SCHOOL YEARS-OF-GROWTH <i>When you were in your school years and grow up</i>
04 Niels	POINT:YOU SEE GOOD <i>Did you see well then</i>
05 Niels	SIGNING POINT:YOU <i>Did you sign</i>
06 Sue	(minimal response by tapping at Niels' hand with one finger)
07 Niels	SCHOOL DEAF SCHOOL <i>At a school, a deaf school</i>
08 Sue	(minimal response tapping with one finger and nodding)
09 Niels	POINT:YOU YEARS-OF-GROWTH (moving hands to change turn) <i>When you were growing up</i>
10 Sue	(moving hands to take turn and answer)

In the first line, Niels expresses that he has a question for Sue, and it is about “before.” Sue is paying attention, and her hands follow tightly connected to Niels's hand movements, but she does not give any observable response. Niels continues in line 02 to clarify what time of “before” he has in mind – “before when you went to school?” – and continues in line 03 with “school days when you were growing up.” Sue still does not give any response, and Niels continues in lines 04 and 05: “did you see well then?” and “did you sign?” At this point of the question, there is an observable response from Sue (by slight tapping with one finger at Niels' hand, but no signal to make a turn shift). Niels asks in line 07, “was your school a deaf school?” Now Sue makes minimal responses by tapping on Niels' hands with one finger in combination with head nods (line 08). Niels ends his question in line 09, by pointing toward Sue. He is repeating “the years of growing up” and finishes his question by moving his hands to a palm-up gesture and a tactile turn-shift position. Sue simultaneously changes her hands from tactile listening to tactile talking (line 10) and starts answering his question.

Extract D shows a process where Niels builds up a question for Sue. A lack of response and turn-taking leads Niels to continue to clarify his request. The joint attention toward their process of talking may be analyzed by focusing on the intention of constructing meaning in the introduction of a new topic. Here, Niels demonstrates communication skills in how the first adjacency pair of an interrogative may be formed step by step, and where the response from the interlocutor influences this dialogic process. The interrogative takes place due to an interactive intersubjective process by close joint awareness of a coming topic. Calibration is a way to describe how Niels reacts to Sue's responses or lack of responses to avoid misunderstanding and how he tries to lead them towards understanding that he wants a response to his question.

Another example, of how the fluency went very smoothly is found in a talk between Niels and Sue at the end of the data collection. This conversation section between them will be summarized here: The two of them start with the need for clarification on whom they were talking to (as earlier presented in Extract A). With this part settled, they start to talk about a guided tour of the cathedral they took part in earlier the same day. They talk of the history of the cathedral, the pilgrim site, and the long process of building the cathedral – parts of the presentation from the guided tour they share, and now discuss. This conversation part goes on for 3 min and 32 s. During 14 turns, their conversation goes on in a series of shorter and longer turns carefully followed up by minimal responses and by following up on each other's input to their conversation topic. This summary is an example of cross-linguistic tactile signing conversation being talks that may run well, and where a joint topic is being shared and developed.

3.4. Using multimodal resources in the interaction

Both conventional and contextual signs are seen in the conversations. This includes the use of haptic signals in the form of conventional or contextual signals made on the interlocutor's hand, knee, shoulder, or back to describe feedback or environmental descriptions (Raanes, 2020; Raanes and Berge, 2017, 2021). In Extract C, when Nina asks if Siri lives in a house with a garden, the Norwegian sign GARDEN was not understood cause of the different signs between the two tactile sign languages for this concept. Siri abruptly turned to raise her question about the sign's meaning before she explicitly adds “I don't understand”. This conversation continues, where Siri underlines her question by expressing a haptic signal illustrated in Fig. 7.



Fig. 7. Question expressed by a haptic signal.

In Fig. 7, the interlocutors sit with their knees interlocked. Siri adds a haptic into her interrogative sequence when she, with her finger, draws a question mark on Nina's knee. In this context, this signal has the possible meaning: "question" or more boldly said, "hello! I don't understand!". Nina understands the need for her to take turns to provide more information and clarify what she is talking about. When more information is provided, they continue their conversation related to the new shared theme of enjoying gardening and outdoor life.

The difference in sign vocabulary, as seen in Extract C, gives rise to the need to clarify by asking the meaning of the specific sign used, and is one of the cross-signing challenges of using and understanding tactile sign language. And the interlocutors must be attentive to adjust to their signing. Across the two tactile sign languages in use, there are different hand alphabets and some differences in the signs for numbers. There are a few cases where numbers are written into the other's palm as a communication technique for sharing numbers.

Several studies of tactile sign languages conclude that non-manual signals are not accessible between deafblind interlocutors, and laughter and smiles are mentioned as signals that may be hard to receive by touch (Willoughby et al., 2019). This study demonstrates, in line with early studies by Collins and Petronio (1998) and Iwasaki et al. (2019), how non-manual markers may bear parts of the dialogues.

Laughter is a response indicative of positive interaction. There are frequent smiles and laughter during the conversations as part of the response to the interlocutor's sharing. During our analysis process, we had a comment on tactile signers' bodily position toward dialogues, and how their bodies were so close that vibrations made by air and body movements during laughter could be noticeable through tactile sensory channels. In their two-handed tactile position, the interlocutors are sitting with legs and thighs interlocked, making the hands and shoulders relaxed and making body movements and orientation noticeable. Laughter causes tension in breathing, bodily movement, and body contact and may make the air between them vibrate. Smiles and mouth movements are expressed frequently but are not as likely to be a noticeable tactile response. Having all noticeable parts of the interlocutor's utterance in focus, we also notice the many nods accruing in the selected data, most of them were minor head movements. Head movements were not noticeable by interlocutors. The categorization process showed several examples of simultaneous movements in the head, body, and hands while nodding. After calculating head movements, we started another round of classifying between the more than 150 nods in one of the conversations with video play in slow motion. With a freshly brewed cup of coffee, we sat down to study the transcribed conversation. With the coffee cup in our hands, and without a conscious plan, we started mirroring the head movements we observed in the video. At the beginning of the conversation, there were some fragile and slight head movements. To our surprise, the reaction was immediate in our cups of coffee – rippling movements. Even the slightest head movements were noticeable in our well-filled cups. This finding made us reconsider the understanding of tactile conversation and interaction and question previous studies classifying non-manual expressions as not being available for deafblind signers. Bodily expressions provided in forms classified as non-manual signals may produce vibration, perceived as communication signals in tactile signing. Nods, head-shakes, and laughter are among signals with a bodily vibration component that may be shared among deafblind signers in their interaction. Vibration in various forms from the interlocutor and the environment adds input to the ongoing conversation in tactile communication. This finding adds to the small but growing research on how multimodal studies give new insight into communication processes (Bezemer and Kress, 2014). Earlier descriptions and division between manual and non-manual signals where the non-manual parts of tactile sign languages have been defined as not accessible for deafblind signers must be examined more deeply and may need to be reconsidered.

4. Concluding discussion

Empirical data from cross-signing between interlocutors new to each other and their representative tactile sign languages gives us findings that highlight pragmatic knowledge of tactile signing. The results add to linguistic knowledge on how multimodal resources may be used to negotiate, to mean, and to build an intersubjective edifice between those taking part in the conversation. There are still no similar studies within meetings or other international meeting arenas arranged by deafblind associations. Nevertheless, there is a possible hypothesis that a similar understanding may exist between deafblind signers when they meet and cross-sign with their national sign languages. This study adds to findings from cross-signing studies among visual signers, where calibration and tuning into new topics must be done very clearly to avoid misunderstanding. Further research in cross-signing situations among deafblind people will open more knowledge of tactile sign language use principles and on the translanguaging processes within the tactile signing communities. In this study, several forms of negotiation processes are found, where both interlocutors actively take part in finding a path toward joint attention and understanding. In these processes, the intention of the request from the interlocutors must be made clear, and a response is needed. The action to express intention and to focus on a subject is achieved by language simultaneously with multimodal signals, and there are several layers of signals for the interlocutors to establish and maintain an intersubjective relation and to give and receive a response in their dialogues.

Bringing in participants who were new to each other and each other's languages led to cross-linguistic challenges and adjustments (García and Li, 2014; Rocketship et al., 2022). When accepting the invitation to the research event with data collection, the informants expressed that meeting deafblind people from another country motivated them to participate. This indirectly supports the theories of transnational relations, and identification as a group is relevant for the individuals belonging to the deafblind communities (Breivik, 2005; Miner, 2008). But even with a high motivation to meet each other, providing some meta-linguistic consciousness accompanying them into the days of data collection, this study shows how deafblind people from Sweden meeting deafblind people from Norway experienced challenges in understanding each other. There are several factors for this challenge, for example, the two languages TSTS and TNTS have completely different fingerspelling systems, and when the manual alphabet letters differ, due to their blindness they have no support from mouthing (i.e., reading the mouth movements that form the words from spoken language). In addition, initialized signs (handshapes that come from fingerspelling) cannot easily be understood, and there are generally many signs in the two sign languages that differ (Michelsen, 2022). TSTS is mainly a one-handed tactile sign language, while TNTS uses contact between two hands, causing differences in turn-taking and bodily position during conversations. Knowledge of tactile sign languages is still an area where much still is not described, as well as the modality of touch and tactility in interaction, which Mondada describes as “a largely understudied form of sensoriality” (Mondada 2016: pp 355).

Being exposed to cross-signing prompted the participants to engage in a negotiation for intersubjective awareness in their tactile interaction. The participants' skills in their tactile language were used and adjusted in their talks by finding ways to have attention to the other's hand movements, bodily orientation, turn-taking, and backchanneling signals (as seen in the examples illustrated in Figs. 1–3). Similar techniques in turn taking are seen in Iwasaki et al. (2019). The starting point of a new cross-linguistic conversation may be to slow down in speed to ensure each other's attention in the process of establishing and coordinating interaction.

Their interaction involved several ways of building mutual understanding by contextualizing the use of bodily and multimodal signals. Strategies for clarifying the need for more information were an essential part of making clarifications and making the conversation develop. Our findings show strategies such as pointing, specific use of the signing space, and depiction signs where hand movements and signs are performed to describe action or objects. Being introduced in a shared context may be a way to contribute to meaning construction in cross-signing. The examples connect to strategies also described by Willoughby et al. (2018) and are observed in this present study being applied in our cross-linguistic material. The cross-linguistic strategies of pointing seem similar to how pointing is done in conversations in TSTS and TNTS, and in this study are observed with frequent use of repetition and duration in holding signs for a time. The clarification and pointing strategies give attention to the social interaction when expressing “this is a request for a response from you”, and the pointing may be part of referring to something specific, as when pointing towards artifacts (Bezemer and Kress, 2014). The use of artifacts as a strategy of clarification is illustrated in Fig. 4.

From the very beginning of the talks, it is seen how negotiation takes place in interaction. Due to the interlocutors' background in two different sign languages, there are instances of signs and formulations that are not understood, where clarification and repetition strategies are needed. If one side does not understand, there are rapid responses to take turns to clarify the context of the unfamiliar sign being used, as seen in Extract C. When there is an intent to introduce a question or a new topic in a talk, these are important and may be demanding parts of a conversation. In our data, we see how building up interrogative requests for some specific information is done by ensuring joint attention by constructing a series of smaller sequences allowing response step by step, as seen in the transcript in Extract D. As a tactile conversation style, using such sequences creates natural space to give short tactile feedback responses during the dialogue, and is seen as a strategy to be used in such situations.

Knowledge obtained from this study shows how deafblind signers from Sweden and Norway use bodily and tactile components to communicate within the tactile modality to understand each other. After three days, the four deafblind informants met and together experienced ways of adjusting their communication and managed to find ways of communicating together in cross-signing. As a result, their signing tuned into each other's way of communicating, and they could request

more clarifications when needed. In this way, their intersubjectivity awareness towards joint functional communication skills was quickly established.

This study's findings show a rich repertoire of strategies in use when deafblind signers come to share understanding when communicating across different language backgrounds – such as initiatives for action and information, negotiation for essential information, reformulating, and repetition. Multimodal response signals by touch and movements are an almost constant part of tactile signers' talk. The participants put conventional response signals into use as well as artifacts, haptic signals, and contextualized depiction signs. Tactile turn-taking is done in positions that make awareness of the other person's hands and body easily accessible. This bodily awareness uses the common signing space as a tool for signals on feedback and turn-taking. Variations of tactile information through the hands, from holding on to the hand(s) in a monologue position to moving toward a palm-up gesture or a dialogical position, seem to be essential parts of adjustment, negotiation, and information transition. The timing of the signals is also of great importance. For example, when calibrating joint attention in communication situations, it seems crucial that the signers need help understanding each other clearly because of different languages and cultural backgrounds. Signing to each other has no access to the visual context.

The varied forms of communicative strategies between signers from two tactile sign languages document the power of communication where the participants find ways to adjust to establish understanding. By activating their communicative skills and supporting shared experiences as an entry for conversation topics, we have documented how the participants work to develop functional cross-linguistics talks. Further studies of cross-signed meetings among tactile sign language users may be helpful for more knowledge about communication in the tactile modality.

Data availability

Data will be made available on request.

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Appendix. Transcription Conventions

THINK	Signs are glossed in capital letters
POINT:YOU	Index finger toward the interlocutor
POINT:ME	Index finger toward oneself
()	Description of interactional activities
NTS	Sign in Norwegian Sign Language
STS	Sign in Swedish Sign Language
DS	Depicting sign
YEARS-OF-GROWTH	Translated meaning of a depicting sign

References

- Bergman, B., Engberg-Pedersen, E., 2010. Transmission of sign languages in the Nordic countries. In: Brentari, D. (Ed.), *Sign Languages: A Cambridge Language Survey*. Cambridge University Press, pp. 74–94.
- Bezemer, J., Kress, G., 2014. Touch: a resource for making meaning. *Aust. J. Lang. Literacy* 37 (2), 77–85.
- Breivik, J.-K., 2005. *Deaf Identities in the Making: Local Lives, Transnational Connections*. Gallaudet University Press.
- Byun, K., Vos, C. De, Bradford, A., Zeshan, U., Levinson, S.C., 2018. First encounters : repair sequences in cross-signing. *Topics in Cognitive Science* 10, 314–334. <https://doi.org/10.1111/tops.12303>.
- Collins, S., 2004. *Adverbial Morphemes in Tactile American Sign Language*. Graduate School, Union Institute and University.
- Collins, S., Petronio, K., 1998. What happens in tactile ASL. In: Lucas, C. (Ed.), *Pinky Extension and Eye Gaze: Language Use in Deaf Communities*. Gallaudet University Press, pp. 18–37.
- De Meulder, M., Kusters, A., Moriarty, E., Murray, J.J., 2019. Describe, don't prescribe. The practice and politics of translanguaging in the context of deaf signers. *J. Multiling. Multicult. Dev.* 40 (10), 892–906. <https://doi.org/10.1080/01434632.2019.1592181>.
- Delsing, L.O., 2005. *Håller språket ihop Norden?: en forskningsrapport om ungdomars förståelse av danska, svenska och norska*. [Commend languaging in the Nordic countries? Research on young adults and their understanding of Danish, Swedish and Norwegian]. Nordic Council of Ministers.
- Edwards, T., 2012. Sensing the rhythms of everyday life: temporal integration and tactile translation in the Seattle Deaf-Blind community. *Lang. Soc.* 41 (1), 29–71. <https://doi.org/10.1017/S004740451100090X>.
- Edwards, T., Brentari, D., 2021. The grammatical incorporation of demonstratives in an emerging tactile language. *Front. Psychol.* 11. <https://doi.org/10.3389/fpsyg.2020.579992>.
- ELAN 6.4 [Computer software], 2022. <https://archive.mpi.nl/tla/elan>.
- Ferrara, L., Anible, B., Hodge, G., Jantunen, T., Mesch, J., Nilsson, A.-L., 2022. A cross-linguistic comparison of reference across five signed languages. *Linguist. Typol.* <https://doi.org/10.1515/lingty-2021-0057>.

- Gabarró-López, S., Mesch, J., 2020. Conveying environmental information to deafblind people: a study of tactile sign language interpreting. *Front. Educ.* 5, 157. <https://doi.org/10.3389/feeduc.2020.00157>.
- García, O., Li, W., 2014. *Translanguaging : Language, Bilingualism and Education*. Palgrave Macmillan.
- Green, E.M., 2014. Building the tower of Babel: international Sign, linguistic commensuration, and moral orientation. *Lang. Soc.* 43 (4), 445–465.
- Haualand, H., Kermit, P., Hjulstad, J., Ødemark, I.L., 2021. Barn Og Unges Tilgang Til Tegnspråk I Norden - En Litteraturstudie. *Språkrådet - Nordisk tegnspråknettverk*, Oslo.
- Hodge, G., Goswell, D., 2021. Deaf signing diversity and signed language translations. *Appl. Ling. Rev.* 1–39. <https://doi.org/10.1515/applirev-2020-0034>.
- Iwasaki, S., Bartlett, M., Manns, H., Willoughby, L., 2019. The challenges of multimodality and multi-sensoriality: methodological issues in analyzing tactile signed interaction. *J. Pragmat.* 143, 215–227. <https://doi.org/10.1016/j.pragma.2018.05.003>.
- Keller, J., 1864. Fortellinger om de blinde døvstumme. [Stories about the blind deaf-mute]. *Nordiske Blade for Døvstumme [Nordic Journal for the Deaf-Mute]* 6 (2), 61–62.
- Kusters, A., 2021. International sign and American Sign Language as different types of global deaf lingua francas. *Sign Lang. Stud.* 21 (4), 391–426.
- Lahtinen, R., 2008. *Haptices and Haptemes. A Case Study of Developmental Process in Touch-Based Communication of Acquired Deafblind People*. Doctoral dissertation. Helsinki University, Special Education.
- Linell, P., 2009. *Rethinking Language, Mind, and World Dialogically : Interactional and Contextual Theories of Human Sense-Making*. Information Age Publ.
- Manns, H., Willoughby, L., Iwasaki, S., Bartlett, M., 2022. Intersubjectivity and (non-)shared modes of interaction in Australian tactile signing. *Lingua* 271. <https://doi.org/10.1016/j.lingua.2022.103295>.
- Mesch, J., 2001. *Tactile Swedish Sign Language – Turn Taking and Questions in Signed Conversations of Deaf-Blind People*. Signum-Verlag, Hamburg, Germany.
- Mesch, J., 2013. Tactile signing with one-handed perception. *Sign Lang. Stud.* 13, 238–263. <https://doi.org/10.1353/sls.2013.0005>.
- Mesch, J., Raanes, E., Ferrara, L., 2015. Co-forming real space blends in tactile signed language dialogues. *Cognit. Ling.* 26 (2), 261–287.
- Michelsen, G., 2022. *Grenseløse Tegn? – Mobilitet og Tegnspråk I Norden [Signs without Boarders? Mobility and Sign Language in the Nordic Countries]*. Nordic Welfare Center. <https://doi.org/10.52746/ISHC6013>.
- Miner, I., 2008. Identitetsproblemer i forlængelse af diagnosen Usher syndrom og erhvervet døvblindhed. In: Just, L. (Ed.), *Psykologiske problemstillinger hos døvblindeblevne – en artikelsamling*. Videnscenteret for Døvblindeblevne, Herlev, pp. 7–18.
- Mondada, L., 2016. Challenges of multimodality: language and the body in social interaction. *J. SocioLinguistics* 20 (3), 336–366. https://doi.org/10.1111/josl.1_12177.
- Moriarty, E., Kusters, A., 2021. Deaf cosmopolitanism: calibrating as a moral process. *Int. J. Multiling.* 18 (2), 285–302. <https://doi.org/10.1080/14790718.2021.1889561>.
- Raanes, E., 2006. Å gripe inntrykk og uttrykk: Interaksjon og meningsdanning i døvblindes samtaler: En studie av et utvalg dialoger på taktilt norsk tegnspråk [To catch impressions and expressions: Interaction and meaning construction in deafblind people's conversation]. Norwegian University of Science and Technology, Trondheim.
- Raanes, E., 2020. Access to interaction and context through situated descriptions: a study of interpreting for deafblind persons. *Front. Psychol.* 11, 1–15. <https://doi.org/10.3389/fpsyg.2020.573154>.
- Raanes, E., Berge, S.S., 2017. Sign language interpreters' use of haptic signs in interpreted meetings with deafblind persons. *J. Pragmat.* 107, 91–104. <https://doi.org/10.1016/j.pragma.2016.09.013>.
- Raanes, E., Berge, S.S., 2021. Intersubjective understanding in interpreted table conversations for deafblind persons. *Scand. J. Disabil. Res.* 23 (1), 260–271. <https://doi.org/10.16993/sjdr.786>.
- Raanes, E., Mesch, J., 2019. Dataset. Parallel Corpus of Tactile Norwegian Sign Language and Tactile Swedish Sign Language. Norwegian University of Science and Technology/Stockholm University.
- Rocketship, F., Ali, K., Braithwaite, B., 2022. Intralinguistic and crosslinguistic variation in the turn-taking organization between deaf-blind signers: new evidence from bay islands Sign Language. *Univ. Penn. Work. Pap. Ling.* 28 (2). Article 16.
- Sacks, H., Schegloff, E.A., Jefferson, G., 1974. A simplest systematics for the organization of turn taking for conversation. *Language* 50, 696–735. <https://doi.org/10.2307/412243>.
- Schegloff, E.A., 2007. *Sequence Organization in Interaction: A Primer in Conversation Analysis, vol. 1*. Cambridge University Press.
- Willoughby, L., Manns, H., Iwasaki, S., 2014. Misunderstanding and repair in tactile Auslan. *Sign Lang. Stud.* 14 (4), 419–443.
- Willoughby, L., Iwasaki, S., Bartlett, M., Manns, H., 2018. Tactile sign languages. In: Östman, J.-O., Verschueren, J. (Eds.), *Handbook of Pragmatics*. John Benjamins, pp. 239–258. <https://doi-org.ezp.sub.su.se/10.1075/hop.21.tac1>.
- Willoughby, L., Manns, H., Iwasaki, S., Bartlett, M., 2019. Are you trying to be funny? Communicating humour in deafblind conversations. *Discourse Studies*. <https://doi.org/10.1177/1461445619846704>.

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