# Indexing turn-beginnings in Norwegian Sign Language conversation

Abstract:

It is well known that signers and speakers routinely produce finger points during interaction. While the referential functions of such finger points have received great attention from researchers, they are also used to manage interactions between interlocutors. These functions are less understood and have received less research focus. The current study helps to redress this gap in the literature by investigating how finger pointing is used to index and coordinate turn-beginnings in a corpus of 11 semi-naturalistic (Norwegian) signed language conversations, involving between two to five signers (3.4 hours of signing). The data was initially annotated in ELAN and then further qualitative analysis was conducted. This investigation revealed that finger pointing effectively indexes previous and upcoming discourse, thereby binding sequences of conversational moves and guiding their trajectory, helping signers to coordinate turn transitions and interaction as it unfolds.

Keywords: pointing, indexicality, interaction, turn-taking, Norwegian Sign language

## Coordinating and collaborating in multimodal conversation[1]

Coordination and collaboration are key aspects of human face-to-face emergent interaction, as speakers and signers alike use the various semiotic resources available to them to achieve their personal, social, and communicative goals. A wealth of cross-disciplinary research has provided details into how such coordination and collaboration are achieved in various interactional settings (e.g., Clark & Wilkes-Gibbs, 1986; Schober & Clark, 1989; Krauss & Fussell, 1991; Clark & Brennan, 1991; Wilkes-Gibbs, 1997; Goodwin, 2000; Clark, 2005; see also Kidwell 2013). Important to this work has been the investigations on how interlocutors establish and build up common ground as well as how they project and anticipate communicative moves over time.

Here, common ground is defined as "the sum of [two people's] mutual, common, or joint knowledge, beliefs, or suppositions" (Clark, 1996, p. 93), which is predicated upon a shared basis and a form of self-awareness by the interlocutors. This means that common ground is not information a person has for themselves, but information that they assume their interlocutor(s) also has. These assumptions about mutual knowledge shape the ways interlocutors use language with each other and how they coordinate joint activities, such as turn-taking in conversation.

In conversation, people respond and adjust their talk to the common ground that accumulates incrementally across sequences of semiotically diverse, multimodal utterances. Part of this responsivity rests in the projective and anticipatory nature of

[1] The term 'multimodal' is often used in research on spoken language interaction to mean the oral-aural *and* visual-gestural bodily actions people engage for meaning-making (e.g., manual actions plus speech). In contrast, in research on signed languages, the term 'multimodal' is most often used to refer to the multiple visible bodily articulators that can be engaged simultaneously for meaning making (e.g., eye gaze plus manual actions). Here, the term is used in both of these ways, depending on the research being discussed.

grammar and interaction (Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1984; Streeck, 1995; Goodwin, 2002; Auer, 2005; Streeck & Jordan, 2009; Depperman, 2013; Depperman & Streeck, 2018). Projection and anticipation refer to the fact that a prior action can foreshadow an action to come. For simple examples, we can envision how a question posed by an interlocutor projects a response from another, or how interlocutors anticipate transition relevance places. Projections provide potential next moves, which interlocutors anticipate and negotiate in real time. Thus, both projection and anticipation rely on interlocutors' understanding of various temporalities and how multimodal actions and grammar typically unfold and mutually elaborate each other (Streeck, 1995; Goodwin, 2002; Auer, 2005; Iwasaki, 2009; Depperman & Streeck, 2018; Mondada, 2018).

Much of our understanding of these aspects of language and interaction have emerged from research on spoken language interaction. However, there is much to be gained by examining how coordination and turn-taking are achieved by signers in signed language interaction. The current study does just this by examining how Norwegian signers use finger pointing at turn-beginnings to link talk together across communicative moves, index emergent common ground along the way, and project next moves. In the following sections, context for the current study will be provided focusing on finger pointing and turn-beginnings in spoken and signed language interaction. Then the data and analysis for the current study is briefly presented, which is followed by detailed examples of finger pointing at turn-beginnings from Norwegian Sign Language conversations. It will be argued that these finger points are suited for the interactional work required during turn-beginnings.

## Finger points as symbolic indexicals

Finger pointing, as well as other forms of manual pointing, has been and continues to be a topic of great interest to researchers and has been examined and considered from a cross-disciplinary range of approaches and theories. In much of this work, the referential meanings manual pointing express have been of most concern. In this line of inquiry, researchers have detailed the ways in which speakers and signers finger point to reference themselves and others, as well as other real/imaginary and concrete/abstract referents. It is outside the scope of the current study to review this extensive body of important literature, but for examples the reader is directed to Kita (2003) and chapters therein, Kendon (2004), and Enfield (2009) for studies on spoken languages and Engberg-Pedersen (2003), Liddell (2003), Cormier, Schembri, & Woll (2013), and Johnston (2013a, b) for studies on signed languages.

Finger pointing, and pointing more generally, is argued here to also be exceptionally suited to interactional work because of its status as a symbolic indexical. Symbolic indexicals are semiotic signs that exhibit both conventional and non-conventional components and thus require a good deal of context to be interpreted appropriately (Enfield, 2009). With regards to finger pointing, we can say that the physical form is a conventional way of projecting a vector towards a referent in Norwegian and many other societies, but that one must rely on specific contexts of use to understand the meaning of the point. They are one prototypical form of indicating, and more specifically, directing-to (Clark 2003). They work "*as a directive to their addressees to focus their attention on an object, place, or event*" (Clark, 2005, p. 509, italics in original). Take for example a composite utterance from the current study's dataset (provided in Figure 1), which can be translated as 'You work at a paper factory.'


Figure 1. A finger point to a physical referent (Ferrara & Ringsø, 2021, DPNTS_Tr_CJVi1.eaf, 12:35.7-12:37.4).[2]

This utterance begins and ends with finger points directed towards the signer's interlocutor (glossed as PT:PRO2). Each finger point is indexical because "it is taken to stand for an object because it has a relation of actual contiguity (spatial, temporal, or causal) with that object" (Enfield, 2009, p. 17). In this particular case, the finger points index the signer's interlocutor via a spatial relation between her finger point and the other interlocutor's body. In the analysis that follows, we will see that finger pointing is able to index temporal and spatial moments in an emerging conversation: temporal, due to their exact sequential position in an unfolding sequence (at turn-beginnings), and spatial, because of their direction towards the object (here, their interlocutor and their talk in the form of visible signing). In this way, signers are able to use finger points to link previous and upcoming conversational moves, which is important to turn-taking (see section 'Turn-beginnings, pre-beginnings, and presegments'). These symbolic indexicals play an important role in many composite utterances. They are "like glue for

[2] In the figures, manual signs are designated with the English glosses that are assigned to them in Norwegian Signbank that is currently being developed (or according to the annotation guidelines of the Norwegian Sign Language Corpus). Glosses beginning with the prefix PT: identify a pointing sign.

sticking the linguistic system onto the physical world" (Enfield, 2009, p. 25), and so they are argued to be one way signers link their talk to the unfolding interaction.

Taking inspiration from the goals set out in Mondada (2009, p. 1978), the current study details the coordination of turn-transitions, with a focus on finger pointing at turn-beginnings, found across a set of Norwegian Sign Language conversations. A key to understanding such transitions is the temporality of emerging interaction across two time-scales: a coordination of conversational moves between interlocutors, but also the coordination of multiple bodily articulators during periods of turn transition. Therefore, the presented analysis will detail the sequential and dynamic unfolding of turn-transitions and the indexical work finger pointing achieves in this joint coordination.

## Multimodal turn-beginnings in spoken and signed languages

### Turn-beginnings, pre-beginnings, and presegments

It is well observed that turn-taking relies on coordination and collaboration in interaction.[3] Not long after the seminal work by Sacks, Schegloff, and Jefferson (1974), interdisciplinary work began that examined turn-taking as a multimodal activity. These studies have provided essential knowledge into the sequential and simultaneous bodily actions, both audible and visible, which are recruited for the online management of communicative moves across time and interlocutors, which entails more than just

[3] One manifestation of this research theme are studies into the timing of turn-transitions, which generally show signers and speakers preferring turn transitions that minimize overlap (originally in Sacks, Schegloff & Jefferson, 1974; see e.g., McClearly & Leite, 2013; de Vos *et al*. 2015; Girard-Groeber, 2015; Lackner, 2009 summarized in Girard-Groeber, 2015 for studies of signed language turn-taking). In the current study, the use of finger pointing rather than timing specifically is in focus and so this section will mainly review works that contextualize the multimodal nature of turn-transitions, in order to help align this study with current work on spoken language interaction.

speech and morphosyntax (e.g., Kendon, 1967; Duncan, 1972; Baker, 1977; Goodwin, 1981, 1986; Streeck & Hartge, 1992; Ford, Fox, & Thompson, 1996; Streeck, 1995; Hayashi, 2005; Mondada, 2007, 2009, 2013; Iwasaki, 2009; Depperman, 2013).

When multimodal bodily action is analyzed in relation to turn-taking, it is important to be mindful of the action's position within the turn and the larger sequence. These positions shape the meaning and contribution of the bodily action to the unfolding interaction (Goodwin, 1986; Streeck, 2009a; Depperman, 2013). In this study, turn-beginnings are in focus. To identify turn-beginnings, Depperman (2013) takes as departure the question "what a participant needs to do if s/he *starts to produce a vocal contribution* to the interaction" (p. 94, italics in original). For Depperman (2013) and others (see Goodwin, 1981; Auer 1996; Lindström, 2006), turns are oriented to speech, and more specifically, to what are considered spoken linguistic—that is more formal symbolic lexical-grammatical—units. This categorical pairing of speech with language and using this as a criteria to investigate turn-taking becomes untenable in investigations of signed languages (Girard-Groeber, 2015, 2018). First, signed languages are not organized around sound and voice. In addition, signers regularly recruit a range of meaningful, multimodal actions—from conventional to unconventional, from symbolic to indexical to depictive—while languaging in interaction. As a result, a definition of turn-beginnings is amended here to involve what a participant needs to do to start a meaningful contribution to the interaction, which may include a range of bodily actions from lexical signs/words to semi-lexical or even non-lexicalized signs, e.g., hand waving and finger pointing (see also the discussion in Girard-Groeber 2015 who also examines signed language interaction, and considers turn-beginnings to include the preparation phase of turn-initial signs).

Lindström (2006) who has studied the links between grammar and interaction suggests that turns have various typologies that may include presegments, which are different from pre-beginnings (e.g., such as in-breaths or lip parting that prepare for an upcoming turn, but are not considered a part of it, see Schegloff, 1996, p. 93f), as well as postsegments. Presegments, which are the most relevant to the current study, are described as linguistic phenomena below the turn constructional unit (TCU) level that are also syntactically isolated from the main core of the TCU. They, along with the core of the TCU and any postsegments, do positioning work and help interlocutors orientate to the unfolding talk. Presegments function well as turn-entry devices because they do not carry substantial propositional content that can be lost during overlap or, in the case of signed language interaction, a lack of visual attention. Importantly, presegments generally work to establish a right to the floor and also link an upcoming turn to a previous turn. Presegments seem to share some conceptual overlap with the notion of prefaces, or pre's (Streeck, 1995). Pre's are loosely defined as actions that foreshadow what is to come. "They allow other participants a certain premonition as to what this actor might be up to next" (Streeck, 1995, p. 87). Such work can be accomplished via vocal or other bodily means (see also Schegloff, 1984; Goodwin, 1986).

Depperman (2013) mentions the backward and forward nature of turn-beginnings when he outlines the four main tasks speakers (and presumably signers) must accomplish as they design the beginnings of next turns in response to the immediate context and environment. These tasks also index and elaborate on common ground. Speakers coordinate their available multimodal resources to:

1. Achieve joint orientation: The accomplishment of the interactional and spatial prerequisites necessary for producing a turn which is to become part of the participants' common ground.
2. Display uptake: The retrospective and responsive design of the turn with respect to the current state of the interaction, in particular, relating to the immediately preceding turn of the prior speaker. Next speaker needs to display his/her understanding of the interaction so far as the backdrop on which the production of the upcoming turn is based.
3. Deal with projections from prior talk: The speaker has to deal with projections which have been established by (the) previous turn(s) with respect to the next turn(s), i.e., which concern the upcoming turn s/he is about to produce.
4. Project properties of turn-in-progress: The speaker needs to orient (the) recipient(s) to properties of the turn s/he is about to produce.

(Depperman, 2013, p. 93)

In the analysis presented in later sections of this paper, finger pointing by signers will be considered presegments and their contribution to the achievement of these four tasks will be the focus of the discussion. But first, in the following sections, literature concerning the multimodal nature of turn-beginnings is reviewed. This literature contextualizes the analysis presented here and demonstrates how signers and speakers recruit and orientate to multiple bodily articulators during turn-beginnings.

## Eye gaze, pointing, and other bodily actions during turn-beginnings

Studies into multimodal turn-taking in spoken language interaction have often considered how eye gaze patterns participate in turn-management (e.g., Kendon, 1967;

Goodwin, 1981; Brône *et al*., 2017; Auer, 2018), or from another perspective, courses of actions (Beattie, 1978; Rutter *et al*., 1978; Rossano, 2013; see also Kidwell, 2013), all of which have implications for turn-beginnings. Mutual eye gaze between interlocutors has been found to be important for turn-beginnings (Goodwin, 1981, 1986; Brône *et al*., 2017). It is also used to identify interlocutors as speakers and addressees (Kendon, 1967; Goodwin, 1981; Bavelas, Coates, & Johnson, 2002; Lerner, 2003). Different interactional participants will engage directed eye gaze in various ways to display their engagement in an interaction (e.g., re-starts in conversation can reflect moments when gaze is finally received by an addressee or as a way to signal that gaze from an addressee is requested, Goodwin, 1981, p. 61; see also Clark & Brennan, 1991). Additional work has also found that gaze behavior can be used to help interlocutors in multiparty conversations determine who is being addressed and also who should respond in next turns (Kalma, 1992; Lerner, 2003; Tiitinen & Rusuuvuori, 2012; Auer, 2018).

Directed eye gaze is also essential for successful signed language interaction (e.g., Baker, 1977; Martinez, 1995; McIlvenny, 1995; Van Herreweghe, 2002; McCleary & Leite, 2013). The seminal study by Baker (1977) proposed eye gaze as an important turn regulator in American Sign Language (ASL) by demonstrating how signers and other interlocutors adjusted their gaze during different moments in turn coordination (although it is important to acknowledge the technological and methodological limitations of such studies in this era of research). She found that during turn initiations, signers usually gazed away from their interlocutor (except in question contexts and only after they ensured recipient gaze). This general gaze aversion was said to continue over the course of a signing turn. However, it was found that signers

direct their gaze towards their interlocutor in turn-yielding moments. Van Herreweghe (2002) also observed in her study of a meeting conducted in Flemish Sign Language that eye gaze plays an important role in next-signer selection. In particular, it is the signer who establishes mutual gaze with the previous signer who is often granted the next turn. Gaze patterns in Flemish Sign Language have been revisited recently in a larger study using eye-tracking and corpus methods (Beukeleers, 2020). An important finding from the study was that signers' gaze behavior is multifunctional and is used not only for turn-management but that it also is recruited during periods of depiction, including enactment. This creates alternating gaze patterns between the signing space and interlocutors.[4] Such multifunctionality underscores that meaningful bodily actions are interpreted *in situ* and in relation to co-occurring action (see previous section, and also Streeck, 2009a; Girard-Groeber, 2018; Mittelberg, 2019).

While some of the studies mentioned in the previous paragraphs focused solely on eye gaze, other work on signed and spoken languages documents how turn transitions involve (multiple) manual or non-manual actions, often in concert with eye gaze (e.g., Baker, 1977; Bavelas *et al*., 1992; Streeck & Hartge, 1992; Bavelas, 1994; Mondada, 2007; Streeck, 2009a, 2009b; Kääntä, 2012; Mondada, 2013; Li, 2014; Cibulka, 2015; Ryttervik, 2015; Lepeut, 2020). Some of these studies also document the use of finger pointing in contexts of turn-beginnings. We begin by once again mentioning Baker's (1977) foundational work on ASL conversations, which describes a range of manual and non-manual actions that are used to initiate turns. Along with the pattern of looking away from the interlocutor at the start of the utterance after ensuring

[4] Eye gaze has also been observed to guide people to and from additional meaningful bodily actions important to the talk and interaction in spoken language contexts (e.g., Goodwin, 1986; Hayashi, 2005; Sidnell, 2006; Streeck, 2009b).

recipient gaze, optional head and postural orientations towards the addressee can also be observed. In addition, addressees can position their hands in a half-rest position in anticipation of an upcoming turn-ending, a type of pre-beginning. Signers can also project a next turn by shifting their palms slightly towards a current signer and moving hands out of a rest position, which may include "indexing, touching, or waving hand in front of speaker" (Baker, 1977, p. 219), with indexing possibly taking the form of finger pointing.

Moving from signed to spoken language interaction, Streeck and Hartge (1992) examined how speakers use two particular types of visible bodily actions—the [a]-face and palm-up—as turn-entry devices at, or just prior to, transition places in order to self-select or maintain a turn. These gestures were one unobstructive way interlocutors could signal an intent to talk, as they were both visible rather than audible actions. They could also preview the type of talk to come, for example a palm-up gesture being used to introduce a new story component. As these gestures often can occur prior to turn-beginnings, they highlight the "forward-looking nature" of interaction and are one example of many projection-related phenomena that help interlocutors coordinate turn-taking (Auer, 2005; Streeck & Jordan, 2009; Streeck 2009a, see also Schegloff, 1984). As we will see in the analysis sections later, finger pointing in Norwegian Sign Language can also be used in somewhat similar ways, e.g., to project a next turn by another signer.

Mondada (2007) observed a similar function of finger pointing in spoken French. She analyzed work meetings between architects in France, and she demonstrated how pointing to material objects in the interlocutors' shared space can be used both to refer to those objects as well as "make visible [the interlocutors']

engagement and participation in interaction" (p. 199). In particular, she found that interlocutors used pointing actions to self-select for next turn and that other interlocutors adjusted their conduct (i.e., language) in response to these manual actions. In one example from Mondada's (2007) study, a speaker, Pierre-Alain, is finishing up a complex multi-unit turn. As he ends his turn with a decrescendo low voice, another interlocutor, Laura, initiates a pointing gesture which then begins at the same time as she starts her turn. In this way, the point anticipates Pierre-Alain's turn completion and projects Laura as next speaker. Mondada (2007) explains that such pointing gestures are oriented to transition relevance places, and they can be used as a "*method* for projecting self-selection" (p. 203, italics in original).

Shaw (2019) investigated ASL and spoken American English interaction. She found that signers and speakers use a variety of bodily actions to index turn transitions, including manual indexes. In one of the examples she presents, she describes how an American English speaker, Lynn, uses a finger point to index another interlocutor, Sara, who had commented that guessing games are more fun when each team has more than one person guessing. Lynn responds to this comment by saying she knows of another word game and finger points towards Sara. As Shaw (2019, p. 97) explains, the finger point effectively links back to Sara's comment indicating that the upcoming comment is relevant while also securing the floor for Lynn.

In a recent doctoral study, Lepeut (2020) convincingly showed how speakers of Belgian French and signers of French Belgian Sign Language (LSFB) use finger pointing and palm-up actions (in which at least some cases can be considered indexing actions) to coordinate their turn-taking. Focusing here on the study of finger pointing, Lepeut (2020) found that 36.5% of the interactional finger points were used for turn-

regulating functions, with 25.5% being produced at turn-beginnings. In over half the cases, these turn-beginnings also involved the signer addressing their gaze at an interlocutor. There are also a number of instances where the signer looks at the signing space (13%) or shifts gaze towards multiple locations (20%). In the spoken Belgian French data, interactional finger points were used much less to regulate turns, a mere 9%, with only two tokens at turn-beginnings.

Finally, Ferrara (2020) has highlighted the active use of finger pointing in turn-transition contexts in Norwegian Sign Language. This preliminary study worked to outline the range of interactional functions that finger pointing serves, and findings revealed that signers often finger point to regulate turn-taking and give conversational feedback. Signers also pointed to seek information, cite previous discourse, and deliver information, albeit to a lesser extent. Upon further investigation, finger points produced during turn-taking contexts involved signers pointing to take turns (including self-selection), give turns, or hold turns. In some cases, signers used finger points to guide the gaze of other interlocutors to the current signer. An example was detailed where a signer produced a series of finger points to self-select for a turn (Ferrara, 2020, §3.6). These finger points were analyzed as giving the interlocutors in the conversation time and space for the redirection of attention from one signer to the next. They also allowed the next signer to link his upcoming comments with previous discourse by explicitly indexing this previous discourse at the start of his turn. It is these turn-beginnings that are the focus of the current study.

## Data and analysis for the current study

The frequent use of finger pointing during turn transitions uncovered in Ferrara's (2020) study of Norwegian Sign Language conversations was the impetus for the current study.

The full details of the study corpus data are detailed in Ferrara (2020) (and relevant materials related to this larger project are available at https://osf.io/g8zv6/). But to briefly summarize here, a total 408 tokens of interactional finger pointing were identified across 11 conversations by 21 signers (in total, 3.4 hours of signing).[5] Over half of these tokens were analyzed to help regulate turn-taking. Within this subset, 36% (n=76) of the finger points facilitated the initiation of a turn (self-selected or otherwise) (contrasted with e.g., turn giving and turn holding functions). These tokens form the basis of the current study.

In the sections below, detailed, enchronic analyses of several exemplars from this group of tokens are presented. An enchronic analysis "is concerned with relations between data from neighboring moments, adjacent units of behaviour in locally coherent communicative sequences (typically, conversations)" (Enfield, 2009, p. 10). This type of sequential analysis very much aligns with work in multimodal conversation analysis, and both highlight the locally contingent nature of interaction and the semiotic resources interlocutors use to achieve their interactional goals (e.g., Depperman, 2013; Keevallik, 2018; Girard-Groeber, 2018; Mondada, 2018). As such, it is especially suited to investigate how Norwegian signers produce finger pointing at turn-beginnings to coordinate unfolding interaction.

The analyzed tokens presented occurred in different interactional contexts (response to a question, response to a comment, and a word search activity) and focus will be placed on the emerging temporal properties of the turn-beginning, the deployment of finger pointing in conjunction with other bodily articulators (both

[5] These conversations were collected as part of two unrelated projects and involved signers being invited to a location to engage in free and semi-guided conversations, as well as other language-based activities, with other signers.

sequentially and simultaneously), as well as the actions by other interlocutors. Importantly, the indexical work these finger points achieve during turn-transitions will be in focus. The videos of these examples, along with supporting ELAN annotation is available for viewing at https://osf.io/axzgm/.

# Designing turn-beginnings and indexing meanings across moves in Norwegian Sign Language conversations with finger pointing

## Responding to a question

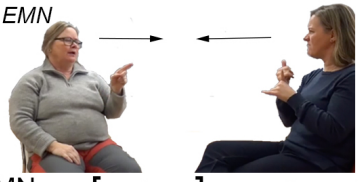
One context where turn-initial interactional finger pointing was observed in the study corpus involved question-response sequences. The example analyzed here is situated within a conversation between two interlocutors, and they are discussing where one of them lives in Trondheim (Ferrara & Ringsø, 2021, DPNTS_Tr_EMN.eaf, 00:07:33-00:07:38.6). The sequence is provided in Figure 2 and begins when the signer, TR2, who is seated on the right in the screenshot in Figure 2, asks her interlocutor, EMN, who is seated on the left, 'So, how do you drive home from Ranheim, which way do you take?' (Lines 1-3, Figure 2). TR2 furrows her brows and gazes at EMN as she asks the question, except for a brief look to the signing space at the beginning of the sign DRIVE. She ends her question with the signs HOW PATH, 'which way do you take,' which re-formulates the focus of the question.

1 TR2 PALM-UP
So

2 DRIVE HOME WHICH PATH RANHEIM
How do you drive home from Ranheim,

3 [HOW PATH]
which way do you take?

EMN TR2



4 EMN → [PT:INT] PT:PRO1 BENEFIT TOLL NOT
ah right, I'm lucky and don't have to take toll roads.

PT:INT = interactional point; PT:PRO1 = point to self

Figure 2. An example of a finger point at the beginning of a turn as part of a larger question-response sequence (Ferrara & Ringsø, 2021, DPNTS_Tr_EMN.eaf, 00:07:33-00:07:38.6). The video of this example can be viewed at https://osf.io/2wrjg/.

EMN begins her response already during TR2's production of the sign HOW (overlapping talk is indicted by square brackets in the transcripts). This may be because TR2 creates a transition relevance place just prior to this as she finishes up a complete question 'So, how do you drive home from Ranheim?' By continuing with HOW PATH, '…which way do you take?,' TR2 re-formulates the main focus of the question. EMN begins her response and displays her understanding at this transition relevance place. She shifts her gaze away from TR2, upwards and to the right, while nodding her head back and opening her mouth (as if to say 'ah'). As her head moves downward, to complete a confirmatory nod, she lifts her left hand and produces a finger point directed towards TR2 (marked with the arrow on Line 4). Her gaze is also now directed at TR2. This moment is glossed as PT:INT and illustrated by the screenshot in Figure 2 (bolded

text in the Figures indicates where screenshots occur in the sequence). Both the finger point and the eye gaze, as well as the signer's body orientation, index TR2 and her visible signing spatially (all are directed towards TR2 and her signing). The finger point also temporally indexes the unfolding action, because it occurs immediately after the initial phrasing of the question (Lines 1-2), and partially overlaps with its reformulation (Lines 3). As EMN relaxes the interactional point on her left hand, she raises her right hand and points toward herself, 'I,' to begin the content of her response. After this initial very brief constellation of dual-action (lasting approximately half a second), TR2 folds her arms into a resting position by her stomach (interrupted only by a brief self-regulation gesture where she rubs her nose) and EMN continues with her response where she explains that she is fortunate not to have to take toll roads to get home.

This turn transition from TR2 to EMN is signaled, at least in part, by the initial interactional point produced by EMN. The finger point, with co-occurring eye gaze behavior, head nod, and mouth movement, worked to index TR2 and thereby her question, as a new increment in their common ground and EMN's understanding of it. The point can also be seen to provide time and space for the turn transition to occur. The stroke of the first sign in her response, PT:PRO1, after the interactional point occurs immediately as TR2 begins retracting her final sign PATH. In this way, the transition from the question to the answer in this interactional sequence is coordinated precisely from one signer to the next (see also Girard-Groeber, 2015; de Vos *et al*., 2015).

## Responding to a comment by an interlocutor

While the above example involved a signer finger pointing to begin a response to a question, this next example involves a signer self-selecting for a turn in response to both explicit and tacit addressing by an interlocutor in a multiparty interaction. It comes from

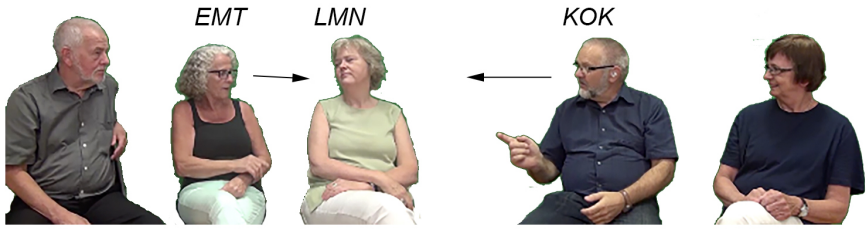
a video-recorded conversation among five deaf signers (Ferrara & Bø, 2022, P-TO1_KOK.eaf, 00:02:56-00:03:15). The sequence involves three of the interlocutors—LMN, EMT, and KOK—while the other two interlocutors behave as onlookers. In Figure 3, a summary transcript, in written English, presents the larger interactional sequence and context in which this interactional finger point is situated (noted by the arrow in Line 15). Please note that this summary transcript is not meant to provide a faithful rendition of the participants' Norwegian Sign Language or the timing of turns across the signers. It is simply provided for the reader as an overview of the content of the sequence and how it generally unfolded.

| | | |
|---|---|---|
| 1 | LMN | Heimdal is nevertheless outside of Trondheim? |
| 2 | KOK | Yeah, a little outside of Trondheim, a little outside. |
| 3 | | But it is actually a part of the same municipality. |
| 4 | LMN | It's connected to the municipality. |
| 5 | KOK | Yes. |
| 6 | EMT | How many kilometers? |
| 7 | | Between you and Trondheim, how many kilometers is it? |
| 8 | KOK | I don't know. |
| 9 | | I don't pay attention. |
| 10 | EMT | How... |
| 11 | KOK | Do I follow the odometer closely? |
| 12 | | No, I don't pay attention. |
| 13 | LMN | Yeah, me neither. |
| 14 | EMT | I know from the city to my house is 3.5 kilometers. |
| 15 | KOK → | Ah, okay. |
| 16 | | So that means that I am probably 6 or 7 kilometers from the city. |
| 17 | EMT | So, not far. |

Figure 3. Summary transcript in English of sequence involving a reply to a comment with a interactional finger point (Ferrara & Bø, 2022, P-TO1_KOK.eaf, 00:02:56-00:03:15).

The sequence begins when LMN asks KOK if Heimdal is a place outside of Trondheim (Line 1). KOK responds with an explanation that Heimdal is a little outside of Trondheim, but that it still belongs to the same municipality (Lines 2-3). As this initial exchange comes to a close, another interlocutor EMT looks at KOK and asks how many kilometers away he lives (Line 6). It is assumed this question was meant to elaborate on LMN's initial question regarding where Heimdal was in relation to Trondheim. The first iteration of this question ('how many kilometers,' Line 6) overlapped with the end of KOK's comment to LMN in Line 3 (and to LMN's mirroring of KOK's comment, Line 4) that Heimdal belonged to the same municipality as Trondheim, so EMT repeats the question as she receives KOK's gaze (Line 7). He replies that he does not know and elaborates that he does not carefully watch the odometer in his car for such things (Lines 8-9 and 11-12). In Figure 4, an elaborated transcript of Lines 14-17 are provided as they form the local context of the interactional finger point examined here. In Line 14, EMT responds to KOK's comment about not following the odometer by providing how far she herself lives from the city of Trondheim, 'I know that from the city to my house is about three and a half kilometers.' She alternates her gaze during this composite utterance between KOK and her own signing. Then while still directing her gaze at KOK, she begins to lower her hand from the sign KILOMETERS into a rest position, signaling an upcoming transition relevance place.

14 EMT KNOW PT:PRO1 CITY PT:PATH-TO PT:POSS1 HOME THREE HALF KILOMETERS
I know from the city to my house is 3.5 kilometers.




15 KOK → PT:INT
Ah, okay.

16 [MEAN] PT:PRO1 SIX SEVEN SIX SEVEN KILOMETERS OUTSIDE
So that means that I am probably 6 or 7 kilometers from the city.

17 EMT [CLOSE-BY]
So, not far.

PT:PRO1 = point towards self; PT:PATH = a point that traces a path; PT:POSS1 = manual point to self to indicate possession; PT:INT = an interactional point

Figure 4. An example of a turn-initial finger point indexing previous discourse and linking it with upcoming conversational moves (Ferrara & Bø, 2022, P-TO1_KOK.eaf, 00:03:08-00:03:15). The video of this example can be viewed at https://osf.io/z3d7q/.

EMT's comment here tacitly addresses KOK and updates their common ground, with which KOK can use to respond to her original question (of how many kilometers he lives from Trondheim, posed in Line 6-7). She makes evident that KOK is the projected next speaker, by directing her gaze towards him, which orients the other interlocutors to the upcoming turn trajectory (see Lerner 2003 for more on explicit and tacit addressing).

In Line 15, KOK responds to EMT's projection by looking at her and first directing a finger point towards her, accompanied by a very slight head nod (see the screenshot provided of the signers in Figure 4). By spatially indexing EMT (i.e., by pointing to her) and temporally indexing her immediately preceding talk (i.e., by

producing the finger point adjacent to EMT's turn), KOK acknowledges her comment and this new information (perhaps in some way reminiscent of the change-of-state function of the English turn-initial 'oh,' see Heritage, 1984b). In Line 16 KOK begins to estimate (based on his knowledge of where EMT lives compared to himself) that he himself must live about six or seven kilometers from the city (of Trondheim). At the beginning of KOK's comment, overlapping with his first sign MEAN, EMT follows up on her own previous comment about where she lives (Line 14) that three and a half kilometers is 'not far,' CLOSE-BY (the overlap is indicated by the bracketed glosses in Line 16 and 17). Due to the angles of the video cameras, it is unclear where KOK is looking during these composite utterances, but it appears that he first looks at EMT during the initial interactive point, PT:INT, 'ah, okay,' (Line 15) and then shifts his gaze upwards and away as he signs MEAN PT:PRO1, 'that means,' and then shifts his gaze back to EMT for the rest of the utterance, 'I am probably between six and seven kilometers from the city.' The brief period of overlapping talk (Lines 16-17) does not appear to be problematic for the interlocutors, and at least for EMT and KOK, they both can see each other's comments, overlapping or not.

This token of an interactional point is paraphrased as 'oh, in relation to you then, I can now answer your original question.' In this way, the point indexes the (incrementally established) common ground between them during this interaction and reflects how this common ground will influence KOK's upcoming response. Thus, the point indexes forward and backward in the interaction. The point indexes forward by signaling an upcoming turn at talk. The point also indexes backward to EMT's immediately preceding comment (of living 3.5 kilometers from Trondheim, Line 14) and also to her original question regarding how far KOK lived from Trondheim (Lines

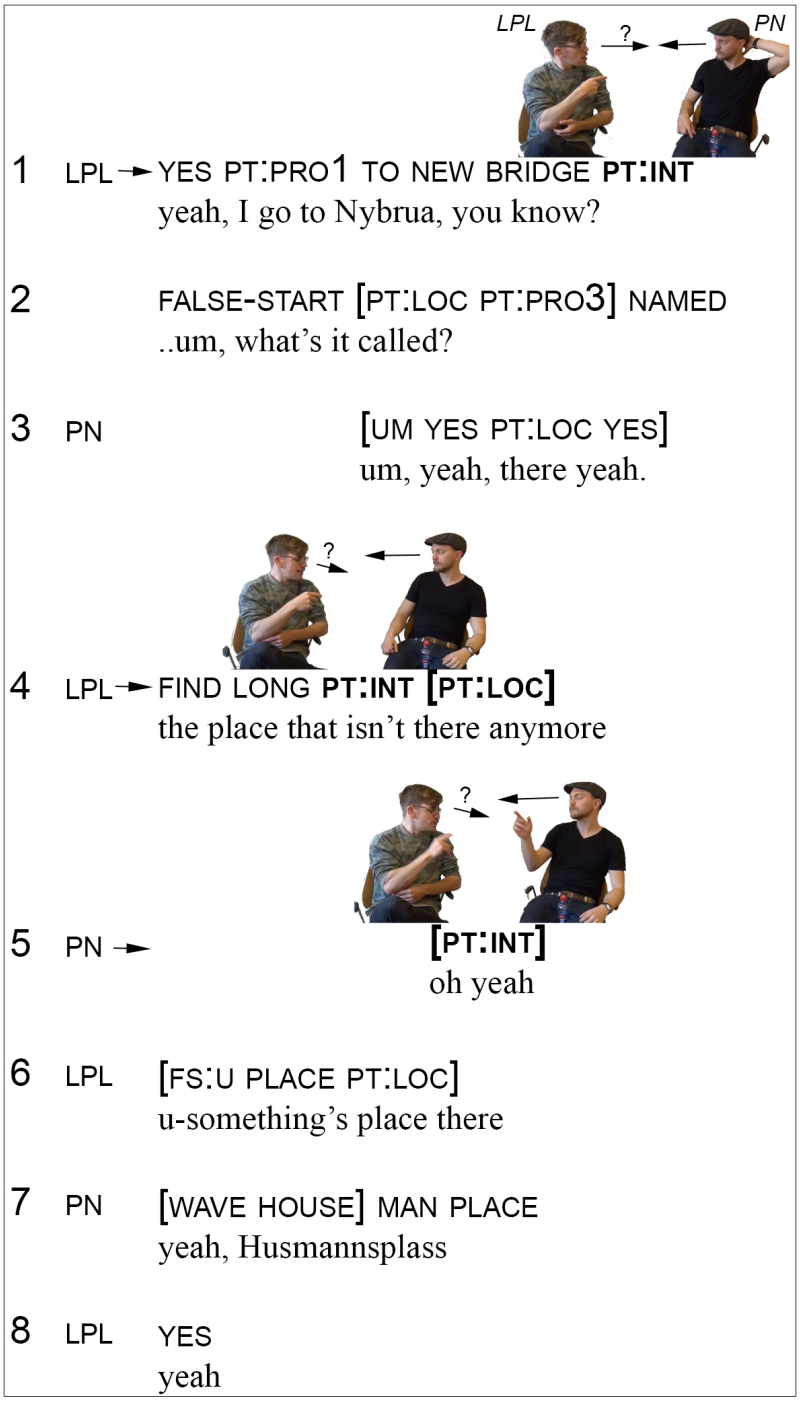
6-7).[6] By doing so, the point indicated the context for interpreting his upcoming comment, which was an answer to EMT's original question.

## Pointing to coordinate turn trajectory and to collaborate on a joint word search

The previous two examples demonstrated how finger pointing can be used to coordinate turn transitions by next signers, as they respond to questions and previous talk. The example examined in this section involves two interlocutors as they collaborate on a joint word search activity (see e.g., Goodwin & Goodwin, 1986; Holler *et al*., 2013; Dressel, 2020 for analyses of multimodal word searching in spoken language interaction). A close analysis of the sequence shows how the signers use finger points to help coordinate the trajectory of turns as they negotiated this activity.

The example comes from a conversation with three signers. TR2 is from out of town and asks the two other interlocutors, LPL and PN, about the best way to get from one place to another in Oslo. The part of the interaction to be examined here is provided in Figure 5, and involves only two of the interlocutors, PN and LPL.

[6] Several studies have shown how particular actions at turn-beginnings are able to link back to not only immediately preceding turns but also turns further back in the talk (Mazeland & Huiskes, 2001; Local, 2004; De Stefani & Horlacher 2008).




PT:PRO1 = point towards self; PT:INT = interactional point; PT:LOC = point towards a location: PT:PRO3 = point to referent; the prefix FS: designates fingerspelling

Figure 5. An example of finger pointing that is used to guide turn trajectory and coordinate joint reference (Ferrara & Ringsø, 2021, DPNTS_Tr_LPL.eaf, 00:13:13.2-00:13:21.5). The video of this example can be viewed at https://osf.io/n6uge/.

During this sequence, one of the signers, LPL (the man on the left in the screenshots in Figure 5) suggests one possible route. He looks at his interlocutor, PN (the man on the right in the screenshots in Figure 5), and signs, 'yeah, I go to Nybrua, you know?' to explain the stop he would take the tram to in order to get to the place in question (Line 1). This comment ends with an interactional point towards PN (illustrated by the screenshot above Line 1), who is also from the area. The eye gaze and point explicitly address PN, but the context also helps LPL to also tacitly address PN, because he is the only one in a position to respond to LPL's utterance (again, see Lerner, 2003 for more about these forms of addressing). This point aims to solicit a confirmation from PN about the location Nybrua, thereby checking their presumed common ground. As LPL holds his finger point towards PN, PN shifts his gaze away from LPL. LPL addresses this lack of a conditionally relevant response by continuing his turn and elaborating his initial comment. However, he is unable to recall the necessary information and produces a sequence of hesitations and pointing actions towards the signing space, which can be interpreted as 'umm, what's it called' (Line 2). During this sequence, PN displays his eventual understanding of where LPL is talking about by signing 'um, yeah, there, yeah,' (Line 3) demonstrating his interactional engagement in the word search sequence through his gaze and confirmatory response.

While PN gives this confirmatory feedback to LPL, LPL is still trying to find more exact information to give PN and does not appear to see this feedback. LPL continues in Line 4 with a new trajectory—this time asking for the name of the place that used to be there but is gone now. This utterance includes another interactional point towards PN (illustrated by the screenshot above Line 4). PN responds to this request by

LPL with an interactive finger point of his own in Line 5 (illustrated with the screenshot above Line 5), directed towards LPL. This interactional point overlaps with LPL's signing, who continues to add clues to the place name he is searching for, 'u-something's place there,' see Line 6. During this overlapping signing, PN has not secured LPL's gaze, and so he begins again with a hand wave into LPL's field of vision (Line 7). He secures LPL's gaze and then provides the name of the place LPL is searching for: Husmannsplass, which LPL confirms in Line 8.

The interactional points produced across this sequence of interaction helped the interlocutors coordinate a joint word search, while also contributing to the alternation of turns between LPL and PN. The first token of an interactive finger point produced by LPL aimed to check assumed shared knowledge (i.e., common ground) of a place in town (end of Line 1, see also the screenshot above Line 1). Failing to get this confirmation, LPL continued his turn. In addition, it can be assumed that this lack of confirmation also influenced the topic of this continued turn—instead of moving on with his original intention, LPL instead moved to clarify and establish PN's knowledge of the location. This led to a slightly altered trajectory when LPL failed to name the details to help with the initial feedback seeking activity. During this word search, LPL asks PN a question to which PN replies (Lines 4-7). PN's response begins with an interactive point—indexing LPL and thereby his question. The point is also interpreted as creating time and space (with the further aid of the hand wave) for LPL to shift his gaze and attention to PN.

After LPL confirms that PN's response ('Husmannsplass') is the one he was looking for (Line 8)—the two interlocutors are now 'on the same page' and upon this newly established common ground, LPL continues his original response to TR2's

question, where he says after all of that it is easier to just ride a bike to that area in Oslo (and not take the tram). Thus, in this example we see finger pointing aiding turn-transitions while indicating that previous and upcoming moves are linked. Such points also provided the time and space for interlocutors to show and wait for interlocutor engagement, which requires mutual gaze.

## Discussion

In the analyses presented in the previous sections, some of the ways Norwegian signers use finger pointing to help coordinate turn-transitions were detailed. These finger points did not occur in a vacuum, but were a part of larger sequences which were composed of various semiotic bodily actions (e.g., eye gaze behavior, head nods) situated within emergent interaction. Importantly, these finger points, often in conjunction with eye gaze, indexed the on-going talk, various interlocutors, as well as next actions. Finger pointing, as a prototypical form of indexing in human interaction, is well-suited for these functions. Just as finger pointing is often used to index referents of propositions, it is also used to index aspects of an ongoing interaction, which help interlocutors coordinate their conversation. As symbolic indexicals, these finger points are capable of tying the ongoing talk to the real-world situation of the conversation both spatially (i.e., by pointing towards physical interlocutors) and temporally (i.e., by being positioned adjacent or sometimes overlapping with talk). This indexical nature, while perhaps not referential (in the propositional sense), does reference the conversation and its interlocutors, along with their common ground. As such, finger pointing at turn initial positions can help to accomplish the roles of turn-beginnings set out by Depperman (2013): achieve joint orientation, display uptake, deal with projections from prior talk,

and project properties about a turn-in-progress (see section 'Turn-beginnings, pre-beginnings, and presegments').

In signed language interaction, interlocutors must see each other to communicate. In order to begin a successful turn then, a signer must have the visual attention of their interlocutor(s). The examples above show that finger points at turn-beginnings can give interlocutors time to direct and focus their attention on the upcoming turn (which may involve turning attention from one interlocutor to another). This is perhaps most clearly evidenced in the example illustrated in Figure 4. KOK's point indicated his upcoming turn, and it was a visual signal that the other interlocutors should begin shifting their gaze and attention from EMT to him. As a type of space holder with little propositional content, these finger points also allow interlocutors to time their turns precisely (again, see Lindström, 2006 on how spoken words in presegment positions of turns accomplish this work in spoken language interaction).

Consider the finger point produced by EMN in Figure 2, which overlapped with the end of TR2's question. This point signaled EMN's upcoming response, which meant that TR2 could end her turn. The first sign of EMN's response after the point occurred during the retraction phase of TR2's final sign, PATH (see Figure 2). Another example that demonstrates how finger pointing contributes to the timing of turns was detailed in Ferrara (2020, §3.6). There a signer produced a sequence of finger points as a way to self-select for a turn. He used these points (in conjunction with signs ACTUALLY and CORRECT) to visually indicate to his interlocutor that he wanted to comment on what she was signing. These point-plus-sign phrases also helped the interlocutor to time the beginning of his comment so that it seamlessly began just after the current signer finished up her turn (probably in response to his attempts at self-selection).

A second important task of turn-beginnings is to display uptake, which relates to the inherently retrospective and responsive design of turns in interaction (Sacks, Schegloff, & Jefferson, 1974; Heritage, 1984a; Lindström, 2006; Depperman, 2013, also see Linell, 2009 about interaction more generally). In all three examples presented above along with many more in the study corpus, finger pointing was used to index prior talk, and the common ground it established, and link it to upcoming talk. For example, we saw that a finger point coupled with a backward head nod by EMN was used to index her understanding of a question posed to her by TR2 (shown in Figure 2). This finger point prepared TR2 for EMN's response that followed. Then, in the second example, KOK's finger point (in Figure 4), indexed the additional information provided by EMT, which helped to contextualize his subsequent comment that effectively responded to her original question about the distance from his home to the city. Finally, in the third example (see Figure 5), we saw that PN used finger pointing to index his eventual comprehension of LPL's word search request. After indexing his comprehension, PN provided LPL with the sought-after location.

A third task achieved by turn-beginnings is that they handle projections from preceding talk (Heritage, 1984a; Depperman, 2013). This is witnessed in all three examples from above and in part relates to the indexical nature of finger points, which allows signers to index preceding talk of interlocutors. By indexing the preceding talk, signers acknowledge the previous turn and indicate they are responding to it. In all three examples, signers finger point as a way to index a previous signer's question, comment, or request for help with a word search. EMN points to TR2 as a way to acknowledge TR2's immediately preceding question about where she lives (Figure 2). KOK, in a similar way, finger points to his interlocutor EMT as a way to engage with her previous

turn's projection which was a contextualizing comment meant to aid KOK in responding to a previous question (Figure 4). Then, finally, in the example of the negotiated word search, PN points to LPL in order to show his understanding of PN's trouble and to indicate his turn will provide the missing word (in this case, a placename, Figure 5).

Finally, Depperman (2013) proposes that turn-beginnings project properties of the upcoming turn. They help orientate interlocutors about what will happen next. It was just mentioned that the turn initial points examined in the examples effectively pointed back to previously occurring talk. At the same time, these indexing acts also help to preview what the upcoming turn will entail. By pointing to an interlocutor and their previous talk, the current signer links that talk with what they will say next. In these cases, we do not see signers changing course and beginning on a new topic. In the first example (in Figure 2), EMN's point to TR2's question projects an upcoming answer. In Figure 4, KOK indexes EMT's previous comment thereby projecting a direct response to it—which comes in the form of a reply to the original question. And PN's point to LPL (in Figure 5) projects his understanding of the situation and projects his upcoming contribution to the resolution of the word search. In these turn-beginnings we see signers continuing with a line of talk. Their initial finger points project these upcoming additional relevant contributions.

As mentioned previously, common ground plays an important role in how conversation unfolds and specifically underlies the four tasks of turn-beginnings. We see that finger pointing is used to point back to the incremental common ground built up via previous communicative moves as well as the communal and personal common ground shared between the interlocutors. For example, in the word search example, LPL

and PN rely on their communal common ground that involves their knowledge of the city they live in to identify the name of the location LPL has momentarily forgotten. Then in the example with KOK and EMT, we see that EMT leverages her and KOK's personal common ground to reply to LMN's original question about how far away Heimdal is from the city of Trondheim. By indexing common ground at turn-beginnings, interlocutors are able to link their upcoming moves to preceding talk, and they are able to show their engagement and relation to the interaction and other interlocutors.

## Conclusion

In this study, an analysis of finger pointing by Norwegian signers to coordinate emerging interaction was presented, with a focus on turn-beginnings. The inherent indexicality of such pointing actions was argued to be well-suited to the functions of turn-beginnings, which entail linking back to previous discourse and the common ground it establishes and linking to upcoming conversational moves. Finger pointing additionally functions to guide the trajectory of conversational moves, as we saw in the Nybrua example. The analysis presented in this study illustrated how interactional finger pointing in turn-beginning positions respond to the interactional, embodied, multimodal, and temporal contingencies of turn-taking in signed language interaction and help signers achieve joint orientation, display uptake, deal with projections, and project properties of upcoming turns (Depperman, 2013).

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