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Incorporation of visual aids into sign language interpretation in a remote educational setting

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ABSTRACT

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This study examines how visual aids are utilised in remote educational interpreting into Finnish Sign Language. As a result of the COVID-19 pandemic, sign language interpreting in Finland had to take a sudden leap into remote environments. However, the practices employed in these settings have not yet been documented. The issue is approached with two research questions: 1) How do interpreters utilise visual aids in an online educational interpreting setting, and 2) What are the differences between interpreters' decisions, and how might those differences be explained?

To answer these questions, two datasets were collected. The primary data set consists of video recordings of seven participants interpreting the same source text. The first data set was analysed using multimodal (inter)action analysis (Norris 2004, 2019). The analysis focused on sequences where the participants incorporated the visual aid into their interpretation and where they pointed to the slide or its contents. The secondary data set consists of retrospective, self-initiated task reviews from the seven participants, which were analysed by content analysis to identify preliminary themes.

This study shows that during interpreting, visual aids can be incorporated into the interpretation by using different modes, primarily body shift, classifier constructions, buoy constructions, and pointing. The different modes create chaining (Bagga-Gupta 2000, 2004) sequences through which parts of the visual source text are included in the interpretation. The findings show that the participants make use of the remote environment's affordances by manipulating especially the mode of pointing. There were similarities within the group and variation between the participants. Also, individual preference could be inferred from the interpreting task data.

The differences between the participants are explained by features of the spoken and visual STs, decisions made during preparation, participant's conceptualisations of the discussed topics, their familiarity with the remote environment, and their previous experiences and historical bodies (Scollon & Scollon 2004).

The results show that, even though meaning is constructed and communicated multimodally in online and offline environments, the remote environment has distinctive features. Practitioners and trainers need to be aware of these features to be able to adapt their working practices accordingly.

Keywords: multimodality, remote interpreting, sign language, task review, multimodal (inter)action analysis, content analysis

ACKNOWLEDGEMENTS

DECLARATION

I declare that the thesis embodies the results of my own work and has been composed by myself. Where appropriate within the thesis, I have made full acknowledgement of the work and ideas of others or have made reference to work carried out in collaboration with other persons. I understand that as an examination candidate, I am required to abide by the Regulations of the University and to conform to its discipline and ethical policy.

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1 INTRODUCTION

In this study, I will conduct a multimodal analysis of a series of interpreted settings. Seven participants took on the task of interpreting a remote educational lecture. I will examine the multimodal setting to see what kind of practices (i.e., single, recognizable, and repeatable actions, cf. Scollon & Scollon, 2004) these sign language interpreters are engaged in and what modes they use in this remote environment and educational context. I will also consider the possible reasons for their decisions. This research design provides much-needed information on what happens in remote settings.

As the COVID-19 pandemic hit in the spring of 2020, different professional fields were forced to adopt remote, online working practices. This change was also true to sign language interpreting (De Meulder et al., 2021). In Finland, several projects focused on developing remote interpreting around the 2000s. However, from 2011 onward, there seems to have been a decline due to changes in how the interpreting services were organized (for an overview of the history of remote interpreting in Finland, see, e.g., Messo & Pajunen, 2021a, pp. 15–16). However, due to the pandemic, sign language interpreting in Finland and globally took a leap to online environments. Moreover, as the society around our profession has embraced the addition of virtual platforms as means of interaction, working online will also be part of our work in the future. As the field of remote sign language interpreting in Finland can be described as relatively new, and as previous work and reports are images of their own time, we are sorely lacking information on the practices linked to remote interpreting.

Also, educational interpreting was moved online, and it has partly remained there even after the pandemic restrictions in society were lifted. Research on educational interpreting has long acknowledged that the multimodality of onsite educational settings can pose challenges to interpreters and deaf students. Previous research has shown, for example, how an interpreter's processing time may affect deaf students' ability to access other visual information presented during the class (e.g., Berge & Thomassen, 2016; Foster et al., 1999; Harrington, 2005). For example, Alapuranen (2017), Bagga-Gupta (2000, 2004), Minor (2011), and Tapio (2019, 2020) have discussed the practices that sign language interpreters employ in educational settings.

Practises that partly aid them in navigating the challenges they might face when combining other visual inputs into their interpretation.

Multimodal analysis of interpreted situations can give us a holistic view of what happens in these situations. The actions we produce or perceive are constructed through the simultaneous and sequential use of multiple modes, each with its own properties and their interwoven nature produces something more than the sum of its parts (see, e.g., Kusters et al., 2017; Norris, 2004; Streeck et al., 2011a). Multimodal analysis helps us to realize that any or none of the available modes can have a principal role in conveying meaning in a communicational setting (Norris, 2004). It also allows us to consider how the environment affects the practices. The role of the material environment has been discussed, for example, in the edited volume by Streeck et al. (2011a), which highlights how the material environments we as interlocutors act in shape our interaction and how our actions can also shape the material environments. In remote settings, the material entities – whether physical, such as the computer, or virtual, such as the platform and contents on a shared screen – become central, and observing people doing things *with things* (Streeck, 1996, as cited in Streeck et al., 2011b, p. 6) is unavoidable.

With its multimodal approach, this study continues to map and discuss interpreters' practices in a remote, higher education setting by answering the following research questions:

> **RQ1 How do interpreters utilise visual aids in an online educational interpreting setting?**
>
> **RQ2 What are the differences between interpreters' decisions? How might those differences be explained?**

In our everyday work, we know and use multiple multimodal meaning-making features. However, we are not necessarily aware of our actions or explicitly taught how to use them. These practices might "just" be picked up along the route. This study continues documenting these practices and linking them on the macro-level so that we as a profession can have a shared understanding of the multimodal aspects of our work and, as a result, the ability to discuss further and develop these practices and their use more

consciously. This study also shows, for example, how technology can shape how we use different modes and how the modes can transform.

What this study does not aim for, however, is to provide a universal inventory of the modes and their use, but focuses – as is the purpose of multimodal investigations – on understanding "the principles of use and model resources available" (Jewitt, 2014, p. 23). What should be kept in mind is that the practices discussed in the following chapters are used in certain communicative moments, each shaped by its participants and their historical bodies (Scollon & Scollon, 2004), and therefore highly situated.

In the first part of the study, Chapter 2 looks at multimodality in different settings and levels of social action. As this chapter will show, multimodality is a complex phenomenon, omnipresent in all social action. Chapter 3 then ties these views together and provides the theoretical framework for this study. In the second part, Chapter 4 presents the data and methodology, Chapter 5 the analysis, and Chapter 6 the discussion. Chapter 7 presents the conclusion.

2 MULTIMODALITY IN DIFFERENT CONTEXTS

2.1 Central concepts for multimodality in interaction

Multimodality refers to approaches that view communication and representation as more than mere language but instead regard the range of communicational forms – or modes – that people use and consider the relationships between those (Jewitt, 2014). It highlights that meanings are created, received, comprehended, and reiterated by the use of different representational and communicative modes (ibid.), which we strategically and meaningfully employ to achieve our communicative goals (Norris, 2004). As Goodwin (2011) explains, human action is constructed through the systematic use of different modes which elaborate each other. Secondly, the organization of action and the use of modes is cooperative, i.e., action is built on the previous actions. Finally, the construction of action is distributed across participants, their embodied actions, and the present diverse modes.

Mode as a concept can be approached from different perspectives. Within social semiotics, a mode is "a socially shaped and culturally given resource for making meaning" (Kress, 2014, p. 60). In the framework of multimodal interaction analysis by Norris (2004, 2013b, 2013a, 2014, 2016, 2019) – from which this study builds upon– mode is defined as "a concrete or abstract system of mediated action" (Norris, 2013a, p. 279) and the focus is primarily on the action which is produced by a social actor (Norris, 2004). For Norris (2019), a mode is a theoretical notion encompassing the cognitive-psychological aspect, i.e., thoughts and feelings; the socio-cultural aspect, i.e., self with others; and the physical body, environments, and objects. Furthermore, she argues that instead of taking it as a semiotic system, viewing mode as a theoretical concept allows us to consider the relationship between the social actor and mediational means.

On a more general level, Jewitt (2014, p. 23) states that for something to be seen as a mode, there needs to be "a shared cultural sense of a set of resources and how these can be organised to realize meaning". Both the social semiotics and multimodal discourse analysis's definitions shortly discussed above emphasise that modes or systems of mediated action display rules and regularities attached to them through the ways they are used by social actors (Jewitt, 2014; Kress, 2014; Norris, 2019). Also present in the

definitions above is that a mode has different affordances, i.e., potentials and constraints, which shape its use and are shaped by the sociocultural context around it (Kress, 2014; Norris, 2019).

Kusters et al. (2017) point out that multimodality studies often neglect to consider the multilingual aspect of communication. By drawing from the fields of signed and spoken language linguistics, multimodality studies, (trans)languaging studies – which are rooted in bilingual education (see, e.g., Canagarajah, 2013; García, 2009; García & Leiva, 2014; García & Wei, 2014; Otheguy et al., 2015) – and gesture studies, the authors introduce the concept of semiotic repertoires which as a lens "provides a holistic focus on action that is both multilingual and multimodal" (Kusters et al., 2017, p. 219). **Semiotic repertoire** refers to the totality of semiotic resources (i.e., the totality of modes, such as text, image, gaze, gesture, posture, language, facial expressions, objects, and the environment) an individual has in their use to communicate. The concept highlights that repertoires are multimodal, embodied, and situated, departing from the idea of languages as bounded systems. (ibid.)

Approaching interaction through the lenses of multimodality and semiotic repertoires emphasises that no mode has a primary role over the others (Jewitt, 2014; Kress, 2014; Kusters et al., 2017; Norris, 2019; Pennycook, 2017; Scollon & Scollon, 2004). As described above, language's role is often emphasised in other approaches, although it is only one mode among multiple other ones. Language is not to be used as a starting point or as a prototype of all communicational modes (Jewitt, 2014; Kusters et al., 2017), but any of the modes can have a central role, or all the modes can have an equal standing (Norris, 2004).

As human action is constructed, cooperative, and distributed between the participants and the modes available (Goodwin, 2011), it is always context-dependent. During social interaction and over time, modes or semiotic resources accrue situated meanings (Streeck, 2011). Also, certain modes can take on "[…] specific roles in a specific context and moment in time. These roles are not fixed but articulated and situated" (Jewitt, 2014, p. 16). Modes are also always entwined with the meanings produced by all other modes present and participating in the communicative event (Jewitt, 2014). As Norris (2019) describes, in real life, people do not usually tease apart the separate

modes but perceive the interactional event as a whole. The interaction participants also select, adapt, and refashion meanings through their interpretations.

The lens of semiotic repertoire is mainly focusing on the individual, as discussed by Kusters et al. (2017), for example: "[t]he concept of repertoire offers a way in which to articulate the ways individuals draw on their diverse resources mapping them onto functions in a communicative act" (Kusters et al., 2017, p. 5). As Kusters (2021) summarizes, some scholars, such as Blackledge and Creese (2017), Kusters (2017), and Pennycook (2017), have also considered spatial repertoires and the significance of place alongside the individual's semiotic resources. The multimodal resources are embedded in the settings where they occur (Canagarajah, 2021; Pennycook, 2017; Streeck, 2011). Therefore, for example, Canagarajah (2021, p. 208) calls for situating these semiotic repertories "in material contexts of interactions to understand how they materialise meanings". This process of contextualisation further emphasises – the already mentioned – distribution: "meaning emerges from distributed practice and […] semiotic repertoires do not solely reside in individuals or even in humans. In some analyses, an object or a surface or an image may be semiotically relevant while in others it may not be." (Kusters, 2021, p. 185). Pennycook's (2017, p. 279) notion of **semiotic assemblage** describes "the dynamic relations among objects, places and linguistic resources" (cf. Stone & Köhring, 2021).

Modes are shaped by their cultural, historical, and social uses (Jewitt, 2014; Kress, 2014; Norris, 2019; Pennycook, 2017; Scollon & Scollon, 2004). How a mode has been used before, whether it has been repeatedly used to represent and convey specific meanings in a particular context, and which social conventions are affiliated with it can result in modes' specialization (Jewitt, 2014). For example, in the context of traffic, the use of red colour (a mode) indicates prohibition to do something. However, they may also be contested by other interlocutors (Canagarajah, 2021), for example, by rearranging the furniture in a classroom from neat rows into a horseshoe shape. Due to these processes of shaping and renewing, each mode has its own trajectory. **Mode's trajectory** may be a long or a short timescale: it may be witnessed as a part of a repeating pattern or action or building on the previous turn in the conversation. For example, Tapio (2020) discusses the use of gaze and its shorter and longer trajectories as witnessed in a classroom environment. As Kusters (2021) concludes on semiotic

repertoires and their assemblages, repertoires can become sedimented in some contexts as they are repeated.

Not only the modes but also the participants in the interaction have their histories. The notion of the **historical body** by Scollon and Scollon (2004) refers to an individual's history and life experiences: when people take part in social action, they bring with them their skills, experiences, and competencies, as well as their goals and unconscious ways of behaving and thinking. Blommaert and Huang (2009, p. 273) give the example of a teacher's historical body, which has "been formed in particular social spaces" through various processes, such as formal and informal learning, acquiring and encountering patterns, and having permanent and transitory skills. This results in others perceiving the person as a teacher, and the practices the teacher performs can be habitual and routine.

2.2   Signed languages and their internal multimodality

The simultaneity in signed languages, which can be witnessed through different linguistic features, highlights the multimodality of signed languages. The following section will focus on the typology of simultaneity and selected linguistic features: signs, buoys, classifier constructions, and depicting constructions. The features covered here are chosen based on their relevance for analysis and discussion later. Given that the study presented in this thesis is situated within the context of Finnish Sign Language (FinSL), after a general description of the linguistic features, I will review FinSL investigations about the topic.

Signed languages possess both sequential and simultaneous properties. These properties exist already in the phonological parameters for lexical items, as pointed out by, for example, Stone and Köhring (2021). A sign produced with the manual articulators, i.e., hands, consists of phonological parameters: handshape, place of articulation or location, orientation of the hand, and movement. All of these are produced during the one lexical item, and a change in one of the parameters may result in a different meaning conveyed by the sign (Johnston & Schembri, 2007). Signers typically have a preferred hand for signing, referred to as the dominant hand (DH), which is used for one-handed signs and acts as the active hand when constructions are asymmetric. Its counterpart is referred to as the non-dominant hand (NDH).

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(Vermeerbergen et al., 2007). Other articulators that a signer can utilise are, for example, torso, eye gaze, mouth, and other facial actions (see, e.g., Boyes Braem & Sutton-Spence, 2001; Johnston & Schembri, 2007; Sutton-Spence & Woll, 1999). The different articulators can either work together to produce a single lexical item, or sometimes each articulator communicates different types of information (Vermeerbergen et al., 2007).

Vermeerbergen et al. (2007) systematize simultaneity into three categories: manual, manual-oral, and simultaneous use of other (manual or non-manual) articulators. These three categories and the examples that will be discussed show the interplay of different modes. The first category, manual simultaneity, occurs when each hand is used as an independent channel. In this case, both hands can produce separate lexical items, or one hand may hold a sign while the other continues signing (Vermeerbergen et al., 2007).

Buoys are an example of manual simultaneity, as presented by Liddell (2003) regarding American Sign Language (ASL). He discusses four types of buoys, all of which are produced by the stationary NDH as the DH continues producing signs. The four types are list buoys, theme buoys, fragment buoys, and pointer buoys. These are also reported in FinSL by Varsio (2009), albeit based on a limited data set with one signer in a single context. Regarding Finland-Swedish Sign Language, Siltaloppi (2023) has studied list constructions. Semantically buoys guide the discourse and serve as a conceptual landmark (Liddell, 2003). They can create cohesion within a text (Johnston & Schembri, 2007; Lautala, 2012).

Another example of manual simultaneity is classifier constructs or depicting constructs. For this study, they are seen as unlexicalised signs, consisting of the same parameters as lexicalised signs: handshape, movement, place of articulation or location, orientation of the hand, and non-manual component. Each parameter can add and alter the meaning of the sign. (Liddell, 2003; Takkinen, 2010.) However, handshape is seen as the key parameter for depicting constructs or classifier constructs (Cormier et al., 2012; Takkinen, 2010). They are part of signed languages' productive or non-core lexicon, and their meaning depends on the context (e.g., Cormier et al., 2012; Johnston & Schembri, 2007; Takkinen, 2010). They can also make use of the space where they are articulated, and the space can then be used as a semiotic resource to, for example, depict elements of real-world space (Stone & Köhring, 2021). Classifier constructs or

depicting constructs also contribute to the cohesion of a text (Johnston & Schembri, 2007; Lautala, 2012).

The second category, manual-oral simultaneity, refers to the simultaneous use of oral and manual articulators. The oral articulator, i.e., mouth, produces either mouthings or mouth gestures. Mouthings are lexical items from a spoken language, which can be morphologically and lexically related or unrelated to the sign. Mouth gestures, on the other hand, are idiomatic gestures produced by the mouth but are not connected to spoken language. (Rainò, 2001; Vermeerbergen et al., 2007.) Rainò (2001) discusses mouthings in FinSL and brings up their context-dependency and variation between the signers in using mouthings. However, she sees mouthings to be a part of FinSL (ibid.), although the status of mouthing is discussed by researchers (Sutton-Spence & Boyes Braem, 2001). Usually, mouthings begin and end simultaneously with the manual sign, although their duration can also be longer (Rainò, 2001; Rauhansalo, 2015).

The third category by Vermeerbergen et al. (2007) is the simultaneous use of other (manual or non-manual) articulators and concerns other non-manual articulators than the mouth. The other non-manual articulators are, for example, eyes, as in the use of eye gaze, and body, as in the change in body posture. For FinSL, for example, Puupponen (2019) has focused on the actions of the signer's head and body. Simultaneous use of non-manual articulators is also involved, for example, in using buoys (Liddell, 2003) or depicting constructions (see, e.g., Takkinen, 2010) discussed above. Also, constructed action, which refers to a discourse strategy in which "a signer enacts the actions, feelings, thoughts and utterances of discourse referents with different parts of their body" (Puupponen et al., 2022, p. 16), can be seen to be a multimodal linguistic action (see, e.g., Cormier et al., 2015).

2.3 Multimodality of lecture discourse, including visual aids

In the following subsection, I will provide a general overview of multimodality in educational settings and discuss lecture discourse and the use of visual aids in academic settings.

Educational settings can consist of different discourse types performed and come into being multimodally. The lecture discourse and the lecturer might aim to convey knowledge, teach new skills and practices, induct learners into the discourse

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community, and promote critical thinking and a positive attitude towards learning (Crawford Camiociottoli, 2007). A lecture is often thought to be delivered by the use of language. However, in all levels of education modes such as spoken, signed, or written languages, image, gesture, gaze, interaction with objects, and body posture, are used together to produce school subject knowledge (cf., Crawford Camiociottoli, 2007; Kress et al., 2001; Sharpe, 2006). Furthermore, not only the actions of people but also the aspects of the physical space contribute to the multimodality of educational settings bringing with it different affordances and constraints (Harrington, 2005).

Teachers are also increasingly expected to add to their output through other multimodal means. Wurm (2010) states that even in academic settings, it is nowadays even expected that spoken or signed text is accompanied by visual output (see also, Rowley-Jolivet, 2002). Visual aids in educational settings can be varied, for example, using handouts, whiteboards, or videos. For this study, however, I will focus on slides and their types and functions. Rowley-Jolivet's (2002) typology of visuals in academic speech consists of four types: 1) scriptural visual aids, which consist mainly of text and are used to structure discourse or engage the audiences; 2) numerical visuals, which are equations, formulae, or tables, and relay abstract information; 3) graphical visuals, such as graphs, diagrams, or maps, which represent abstract concpts but are constructed to communicate an unambiguous meaning; 4) figurative visuals, like photos and images, which are open to several interpretations until further information is provided and which function is to arouse the audience's attention and work as boundaries between sections. Numerical, graphical, and figurative visuals are usually closely linked to verbal discourse, whereas scriptural visuals might not require as much explicit verbal reference (Crawford Camiociottoli, 2007).

2.4 Multimodality in remote settings

In this section, I will discuss remote settings and the effect remote environments have on interaction in general. Secondly, I will zoom in on communication in signed languages and how it is affected by the virtual environment; here, I will also discuss referential pointing. Although pointing is not a feature exclusive to remote environments, the virtual setting may significantly affect its use. Pointing and its functions are also discussed in section 2.5.4.

2.4.1 Communication in remote settings

Although interaction through online communication platforms has existed since the 1980s and for example, Skype was launched in 2003, the COVID-19 pandemic resulted in an increase in video interaction for different purposes: work, education, health care services, and social interaction was moved onto online environments in a rapid pace (Paradisi et al., 2021). Paradisi et al. (2021) describe how video-mediated online communication platforms have overcome the limitations of interaction over time and space. However, online communication is not unproblematic.

Both Mondada (2011) and Streeck et al. (2011b) make the point – although while discussing offline environments – that in interaction, the material setting, the ways the participants' bodies are arranged in the space, and the surrounding spatial configurations are relevant in how the interaction unfolds. These cues are often lacking in virtual, remote environments compared to face-to-face environments. Luff et al. (2003, p. 54) describe how actions such as pointing and referencing rely on "the participants' abilities to interrelate conduct with bodily orientation and features of the immediate environment". They also mention how participants in video-mediated communication often fail to understand that what they see and how they see it does not necessarily correspond to how the co-participant sees and views the environment. Furthermore, they note that participants cannot "determine the relation between other's conduct and the other's own, local environment" (Luff et al., 2003, p. 55).

As Keating and Sunakawa (2011) point out, when people interact via virtual platforms, they operate in two "worlds" simultaneously: the physical world surrounding them, including the technical appliances they use, and the virtual space they share with their interlocutor. They describe interaction on a virtual platform as "unique and challenging settings not only because bodies in proximate space simultaneously co-reside in remote space, but because the machine itself can sometimes be said to have a perspective, to which interactants must orient" (Keating & Sunakawa, 2011, p. 195).

Lack of a shared environment results in a lack of eye contact (Riedl, 2022) and an altered way of using eye gaze (Paradisi et al., 2021). Using a camera, which usually shows only part of the participant's body, results in a lack of body language (Riedl, 2022). The technical setup of the software can result in increased self-awareness as the participants often see themselves, as well as in unnatural interaction with multiple faces

(Riedl, 2022). Paradisi et al. (2021) specify that the virtual environment alters communication rules, such as proxemics. Riedl (2022) also mentions, concerning reasons for fatigue caused by the use of video-mediated online communication platforms, that videoconference participants engage in other activities simultaneously, some of them might be unrelated to the video session, but other tasks might be to do with switching between the software features, for example, settings and chat features.

2.4.2 Remote settings and signed language communication

The topics discussed above also apply to signed language communication in a remote setting, and some of them might be even more relevant, as signed languages are produced by the use of hands and non-manual articulators and received via the visual channel (Vermeerbergen et al., 2007). Keating and Mirus (2003), already 20 years ago, noted that communication in a virtual environment requires the signer to manipulate language features, such as the sign's location, movement, and orientation. They adjust their three-dimensional signing to the two-dimensionality of the virtual environment, for example, by changing their body orientation while sign production to accommodate the signs whose meaning depends on the dimensional contrast. Paradisi et al. (2021), relating to online education and therapeutic intervention, describe the change in visual perception from three-dimensional to two-dimensional as a *quasi* 2D one. They use the modifier quasi to count for the fact that the visual is in between two- and three-dimensional, and the brain can elaborate on the two-dimension image and mentally reconstruct it based on the previous experience. Keating and Mirus (2003) reported that non-manual features were produced manually instead to guarantee their transmission. For example, an eyebrow raise signifying a question is replaced by the sign QUESTION (Keating et al., 2008).

Signer also needs to be aware of the constraints of the video transmission to position their sign and body optimally to the camera. Although self-awareness can contribute to fatigue in virtual environments (Riedl, 2022), Keating and Mirus (2003) report that by seeing themselves on the screen, the participants can monitor the efficiency of their language production and adjust it if needed. Self-monitoring can also be used to adjust manual signs further to technologically mediated space. Keating and Mirus (2003) provide an example where a signer, when referring to her husband standing behind her, "raises her thumb and begins to point directly behind her (at her husband), but then

turns her hands so that her thumb is pointing to the side, where her husband is in the *two-dimensional* world of the screen." (Keating & Mirus, 2003, p. 707, italics in the original). This example of how the participants create new ways of using space (Keating & Sunakawa, 2011) shows how the use of pointing takes a new trajectory in a new environment with different affordances and constraints.

This kind of referential pointing is not unproblematic, however. The "fractured ecologies" between the participants, as Luff et al. (2003) describe the lack of understanding of one another's environments and bodily orientation, cause a person and place reference to be complicated both in signed (Keating et al., 2008; Keating & Mirus, 2003; Keating & Sunakawa, 2011) and spoken (Luff et al., 2003; Riedl, 2022) communication in the remote environment. Keating and Mirus (2003) explain that as participants are not sharing the same proximate space, referential pointing is not as effective, and deictic references (produced by pointing or other means) can be ambiguous or even incoherent.

Keating et al. (2008) report that technologically mediated space also affects the gaze and its communicative properties. In signed communication, gaze and pointing can be used, for example, to select an intended addressee. However, the use and effectiveness of eye gaze are limited in virtual settings, and this is compensated by using the person's name instead, by pointing to them (only possible with a limited number of participants), or by the intended addressees themselves checking their status. (ibid.)

In their study, Keating and Sunakawa (2011) focused on two groups: online gamers who were physically in the same space while operating in an online game environment and deaf ASL users who were having web-camera-mediated interactions. Their focus was on how the participants of the two groups use a range of resources while collaborating and achieving coherence within and across different interaction spaces. Part of their findings was that both groups used conventionalised means they were familiar with in real space or offline environments for coordinating action. However, they had to modify some of their strategies due to the virtual environment. This shaping and renewing of a resource use show modes' shorter and longer trajectories.

2.5 Multimodality in interpreted settings

In the following, I will first discuss what is meant by interpreting and how it shows multimodality on a general level. Secondly, I will shortly define educational and video remote interpreting and provide information on the Finnish context. Then I will look into the interpreting process and finally focus on how the interplay of different multimodal aspects becomes evident in interpreted settings.

Pöchhacker (2004, p. 11) defines interpreting as "a form of translation in which a **first and final rendition in another language** is produced on the basis of a **one-time presentation** of an utterance in a source language" (emphasis in the original). To add to this definition, we can look at the eight dimensions that Pöcchaker identifies to relate to interpreting 1) medium, 2) setting, 3) mode, 4) languages, 5) discourse, 6) participants, 7) interpreter qualifications and 8) problems (examples of topics researched by the date, such as effects of simultaneity, memory, quality, and role). These dimensions can be approached with a multimodal perspective as well.

As already discussed above in section 2.1, all interaction is multimodal, embodied, and context-dependent, and this holds for interpreting as well: With medium, Pöchhacker refers to the modality in which a language is produced and received, i.e., aural-oral modality (spoken languages) or visual-gestural modality (signed languages). Spoken language interpreters work within one modality, whereas hearing sign language interpreters' work is often bimodal. Deaf sign language interpreters, however, work within the visual-gestural modality only (e.g., Bontempo, 2015). The other dimensions paint interpreting to be highly situated: the setting in which it takes place, the chosen working modes which are dependent on the assignment and its nature, the languages used, the discourse type encountered, the participants present, and the individual interpreter's training and professional experience and their cognitive processes vary depending on the situation.

2.5.1 Educational interpreting in Finland

In the Finnish context, educational interpreting consists of interpreting in pre-primary, primary and lower secondary, upper secondary, higher, and adult education (see, e.g., Basic Education Act (628/1998); Upper Secondary Schools Act (629/1998); Vocational Education Act (630/1998)). Usually, these settings are inclusive education settings,

where deaf students and sign language users are a minority. The services provided by a sign language interpreter are seen as access to classroom communication and learning. However, deaf students' needs are not necessarily met this way (De Meulder & Haualand, 2021), and research on interpreting in educational settings has shown that educational interpreting has its challenges. These will be discussed in more detail in the following sections.

2.5.2 Remote interpreting in Finland

As Napier et al. (2018) emphasise, terminology revolving around interpreting services via audio-video telecommunications technology varies. Skinner et al. (2018) discuss how the concepts applied depend on whether spoken or signed language is used, how the participants are located, and the legal framework in which the service exists. In sign language interpreting, differentiation can be made, for example, between the notions of video remote interpreting (VRI) and video relay service (VRS). VRI can refer to situations where participants are in two locations, and the interpreter is in either one. VRS, on the other hand, can refer to situations where all three participants are in different locations, and there is a video link between the deaf person and the interpreter and a telephone or other audio connection between the interpreter and the hearing participant.

In Finnish legislation, the Act on Interpretation Services for Persons with Disabilities (133/2010, §4) defines remote interpreting as an interpreting situation where at least one participant is in a different location and connected via video and audio. However, Kela (the Social Insurance Institution of Finland), responsible for organizing most sign language interpreting services, defines the situation as remote interpreting if the deaf person and the interpreter are in different locations (Kela, 2020). Unlike the examples above, for this study, however, I will refer to situations where the deaf person, the hearing person, and the interpreter are each in separate locations and connected via video-audio connection as remote interpreting. The choice of concept intends to draw attention to the remote, virtual environment where the interpretation is taking place and the features that need to be considered.

Multiple projects in the 1990s and more widely in the 2000s focused on developing remote sign language interpreting in Finland. However, remote interpreting services

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were not yet widely available nationally (Jokelainen, 2011). Although since 2010, remote interpreting services have been available through Kela's remote service for short calls with limited opening hours on weekdays (Kela, 2020; Rainò & Vik, 2020) as well as through commercial companies such as Chabla (see, e.g., Kilpeläinen, 2016), it was only as a result of the COVID-19 pandemic and the rapid switch into online environments that turned remote interpreting into a part of everyday work for sign language interpreters (De Meulder et al., 2021; Messo & Pajunen, 2021a).

Remote interpreting can then be seen as a relatively new service delivery method (Braun, 2015) in the Finnish context; therefore, the practices used in remote settings are still forming. However, few guidelines exist: Kela (2020) has set some guidelines as a part of their service description, mainly focusing on data protection and privacy issues, the location where the interpreting takes place, and how team interpreting is conducted. The Code of Ethics for Community Interpreters (*Asioimistulkin Ammattisäännöstö*, 2021) was edited in 2021 to include issues of remote interpreting explicitly. Furthermore, as a part of their MA thesis, Messo and Pajunen (Messo & Pajunen, 2021a, 2021b) created remote interpretation guidelines for sign language interpreters.

2.5.3 Interpreting process and preparation

Early research into interpreting focused on the mental processes and errors made by interpreters (e.g., Gile's (2002) Effort Model or, more recently, Seeber's (2011) Cognitive Load Model). However, since the late 1980s and early 1990s and the seminal works by Cynthia B. Roy (2015) focusing on sign language interpreting and Cecilia Wadensjö (1998) on spoken language community interpreting, the focus shifted away from source-text/target-text comparisons to a more holistic view of interpreting process. Multimodality plays a part in the interpreting process. As Skinner et al. (2018) say when discussing video remote interpreting, "any modifications to interpreters' working environments are likely to impact their performance and how they process information" because interpreting is a complex task. This view has also been featured in other studies on signed language interpreting (e.g., Harrington, 2005; Metzger, 1999; Napier, 2016).

Processing time or ear voice span between perceiving the source text (ST) and delivering the target text (TT), although necessary for the interpreting process, may result in omissions (Foster et al., 1999; Napier, 2016; Schick et al., 2006), and deaf student missing the visual information produced by the teacher (Harrington, 2005). Berge and Thomassen (2016) report on interpreter-mediated learning situations in which the teacher used one or several artefacts. Teacher's utterances in spoken language and gestures accompany the handling of the artefacts. To fully attend to this simultaneously interpreted complex discourse situation would require that the deaf student's visual orientation be divided between the teacher and the interpreter. Berge and Thomassen (2016) show that as the classroom discourse is arranged to fit the needs of hearing students, deaf students face barriers to visual access, impacting their level of participation. For example, Foster et al. (1999) have reported similar findings in educational settings, and Warnicke (2018) has also pointed this to be an issue in remote community interpreting settings.

If the interpreter lacks background knowledge, or as Warnicke (2018) phrases it - pre-understanding, it can hinder the interpreting process. When the participants, the interpreter included, share mutual reference frames, such as who the participants are, their mutual relationship, and the purpose of the interpreted setting, this supports the interpreting process. Warnicke (2018) also goes to show how the participants' understanding of the environment they are interacting in, for example, the online platform, its affordances, and the common conventions used, influences and can either support or hinder the achievement of communicative goals. Although Warnicke is focusing on VRS settings specifically, there is no reason why the points presented above would also not apply to other remote interpreting settings.

2.5.4 The effect of objects and artefacts

Brewis (2022) draws attention to the agency of objects and materiality in the interpreted event. Material objects played a mediating role in an interpreting setting in a South African university. The objects changed the actions of the human actors themselves and towards one another; the objects made certain actions possible and prevented others. The objects influenced interpreting processes and even affected the interpreter's ability to relay meaning to the service users. The objects, therefore, are "often not merely *used as tools* for performing action, but rather may become *constitutive of* actions" (Davitti

& Pasquandrea, 2017, p. 107). The objects then have and create affordances and constraints to the settings.

Davitti and Pasquandrea (2017), while comparing two dialogic interpreted settings of parent-teacher meetings, discovered how the interplay of different semiotic resources, including manipulation of physical objects, especially a school report, influenced the interaction. They show that even when the two sequences they discuss were comparable in the constellation of participants and activity performed, the different ways of managing the objects affected the inclusion/exclusion of the primary participants and generated shifts in the participatory framework. They also reported pointing to the school report being a regular practice. Their findings on the practice of pointing concur with previous research, for example, by Goodwin (2000) on the use of pointing among archeology students and Mondada (2012) on the use of pointing among scientists having a multilingual meeting. As Davitti and Pasquandera (2017, p. 124) summarize from previous studies, pointing has the functions of "introducing new topics, focusing participants' attention, claiming epistemic responsibility, prefacing other actions, and more generally mobilizing the artefact as a meaningful semiotic resource". They emphasize that pointing is embedded in chains of other semiotic resources, such as gaze, posture, and language.

Reference to artefacts by the teacher or the interpreter, such as pointing to the visual aid, can have a coordinative function (Wadensjö, 1998), highlighting where the students should look. Berge and Thomassen (2016) explain that the interpreter can replicate and reproduce the pointing gesture of the teacher in their interpretation. However, due to, for example, the interpreter's processing time, the gestures are not necessarily synchronized, or due to the interpreter's placement in the setting, the gesture is not directed similarly to the teacher's. The interpreter can also point to a visual aid or other artefacts independently. Even though in remote interpreting settings, the artefacts are not shared by the participants, reference to artefacts visible to others is also a possible tool. For example, Warnicke and Plejert (2021) discuss an example of an interpreter pointing to their headset as a reference to a person or as a signal that someone is currently speaking and, in this way, coordinating the turn-taking.

Stone and Köhring (2021) bring up an additional viewpoint on the reference to artefacts. They examined broadcasted weather forecasts interpreted into British Sign Language

(BSL) and compared the gestural resources used by the English-speaking weather forecasters and the BSL-signing in-vision interpreters. In the setting they studied, the BSL interpreter saw images of the weather forecaster and the map and a composite image where the in-vision presenter was visible on the right-hand side of the screen. This view allowed the BSL interpreters to monitor their output and adjust it. Stone and Köhring (2021) report that the weather forecaster and the interpreter, albeit both using pointing and gesture, do so in distinctly different ways. The forecaster presents the weather relying on spoken language and referring to the artefacts: map and weather images both linguistically and gesturally. On the other hand, the BSL interpreter draws upon language and gesture, as well as refers and draws attention to the forecaster's gestures, the map, and weather images. Stone and Köhring's (2021) study emphasises appropriate timing as a semiotic resource to offer the deaf audience the choice to change the focus of attention.

Minor (2011) compares the strategies used by hearing sign language interpreters and deaf teachers when they are referring to a visual aid during college lectures. She reports several differences: The deaf teachers, standing close to the visual aid, usually point to it and then pause, thereby giving time for the deaf students to look at the visual aid. In contrast, the interpreters, seated off to one side of the room, used conceptual space to describe the visual aid or used no spatial referencing.

As signed languages use physical space to refer to locations of objects, both in the real world and abstract (see, e.g., Liddell, 2003), the interpreters can draw on this resource and recreate the visual aid in front of them to the signing space. This practice also creates cohesion (Johnston & Schembri, 2007; Lautala, 2012). As Stone (2009) describes, when examining how Deaf and hearing translators/interpreters render English broadcast television news into BSL, if they follow the Deaf translation norm, they will consider the multimedia environment and incorporate the available visual information into the TT. The incorporation is achieved by referencing the information visible on the screen and, for example, by choosing specific handling classifiers.

In her dissertation, Minor (2011) synthesized strategies interpreters use when conveying visual information. She built on Frasu (2007), who showed three pre-recorded videos of an interpreter incorporating the structure and content of a slide into their interpretation. Each video employed a different spatial representation of a slide

with a diagram: audience's perspective, where the slide was produced as the audience saw it at the same time as they saw the interpreter; interpreter's perspective, where the slide was produced according to the interpreter's visualisation of the diagram, and the audience had to rotate it mentally; or shared space perspective, where the interpreter pointed and gazed to the slide which was visible next to her. Interviews of 30 deaf consumers revealed that twenty preferred the shared space perspective, a strategy similar to that of deaf teachers. Minor (2011) also identified additional strategies that interpreters used: no reference towards the visual aid or signing space, interpreter pausing and looking at the speaker, at the visual aid, or both. She also documented a few cases where interpreters make explicit reference to the visual aid even when the speaker does not, which she calls explicit naming.

2.5.5 The effect of environment and positioning of the participants

The participants in an interpreted setting draw on multiple semiotic resources, and these resources can influence the verbal meaning that needs to be conveyed by the interpreter. These are deemed so important that, for example, the International Association of Conference Interpreters (AIIC) has stipulated that interpreters need to have direct visual contact with the speakers, both on-site and in remote settings (AIIC, 1999, 2007, 2019). Regarding remote interpreting, Braun (2007) summarizes previous research and states that a tentative overall conclusion that can be drawn is that when conference interpreters are not in the same location as the primary participants, they experience more fatigue and stress. Also, the restricted aural and visual perception due to the remote environment has been reported to affect interpreters' work.

A variety of multimodal environmental factors can affect interpreting onsite. Harrington (2005) reports how, for example, the size of the room, lighting, acoustics, and whether the layout is fixed affect interpreting. He also reported that the use of multimedia or visual aids (such as projectors, television, and video) influences sign language interpreters' work in an educational setting. Also, the number of deaf students and interpreters present, i.e., participants, and the discourse style, whether unidirectional or multiple participants having the possibility to be involved and potential overlapping speech, was reported to have an effect. Deaf students' participation in the classroom might be hindered by, for example, the interpreter's placement in the classroom (Berge & Kermit, 2017; Mather, 2005) or the interpreter's

use of gaze, which, however, especially when combined with body posture can also act as a tool to indicate the current speaker and allocating the following turn (Mather, 2005). As discussed in section 2.4, the use of gaze is not unproblematic in remote settings, which also holds when interpreting is involved. Similarly to the on-site settings described above, the participants might have to choose which visual input to follow (interpretation or shared content on the screen) and whether they direct their gaze into the camera or onto a screen (Braun, 2007).

For example, in therapeutic encounters, issues such as the effect of sightlines, patterns of eye contact, and placement of the interpreter in the room in relation to the primary participants can affect the outcome of the care-providing encounter (Wadensjö, 2001). Also, Koskinen (2018) discusses the bodily and embodied limitations, affordances, practices, and expectations of the interpreter's physical appearance and placement in the space. Whether the interpreter is sitting or standing can affect the interpreted interaction and possibly indicate, for example, power relations between the participants. These physical configurations and the embodied actions by the interpreter and the primary participants are means of regulation and coordination in the situation (see, e.g., Mondada, 2013).

In remote settings, as the participants are not sharing the same proximate space, transmission delay might create confusion (Clark 1996, as cited in Braun 2007) and result in overlapping turns and backchanneling signals losing their effect (Braun, 2007). However, remote environments have their affordances as well. Warnicke and Plejert (2021) describe how a VRS platform includes a text-function, which the participants use to conduct a repair, pre-empt problems, refer back to previously typed text, and overcome language differences. Similar text or chat functions are available on multiple platforms that can be used for remote interpreting.

3 FRAMEWORK: MULTIMODAL (INTER)ACTION ANALYSIS

In this study, I apply the multimodal (inter)action analysis (Norris, 2004, 2019) as my theoretical and methodological framework. In this section, I present it from the theoretical perspective and present my conceptual tools of HLA, LLA, frozen mediated action, and chaining. The concept of mode has already been discussed in section 2.1. Later, in section 4.4, I discuss its practical methodological application while looking into how seven FinSL interpreters interpret the same source text (henceforth referred to as ST) in a simulated remote educational setting and how they utilise visual aids. I will also be considering the possible explanations for their decisions.

The framework's philosophical basis relies on the notions of perception and embodiment (Norris, 2019). Norris (2019, p. 28) describes her philosophy as "[…] actors perceive the world, objects and others through their bodies as they are acting and interacting […] body, mind, and world are so closely interlinked that they are never separated in action and interaction". These philosophical underpinnings broaden the scope of analysis beyond mere language and verbal thought and sit well in the current discussion of what is even understood by the notion of language and through which means meaning-making is constructed (see, e.g., section 2.1; Ferrara & Hodge, 2018; Jantunen, 2022).

The framework approaches perception as the perception through the senses. It also includes previous experience, emotion, imagination, history, and culture. It lets us understand ourselves and how we are interconnected with others, objects, and the environment. The approach to embodiment is not merely language, gesture, gaze, or posture as embodied actions but considers both the physical body and environment and their situated nature (Norris, 2019). These aspects were discussed mainly in sections 2.4 and 2.5.

According to Norris (2004, 2013a, 2019), multimodal (inter)action analysis has **mediated action** performed by the social actor as the unit of analysis. All action is seen as communicative and having history. Mediated action is performed with or through the use of **communicative modes or semiotic resources**. Human action is built on the previous action, and the construction of action is shared between the participants and

the modes (Goodwin, 2011) to achieve the participants' communicational goals. Many actions are learned, habitual, and performed to fit in with other actions and, in particular, social groups (Norris, 2019).

Another analytical tool is **lower-level mediated action (LLA)** which refers to the smallest interactional meaning unit mediated by a communicative mode that a social actor employs (Norris, 2004). For example, a shift in body posture is an LLA mediated by the communicative mode of body.

LLAs are never produced alone, but at all times, we produce multiple LLAs. The chains of multiple LLAs produce the third analytical tool; **higher-level mediated action (HLA)** (Norris, 2004). For example, the introduction of a new slide is an HLA. HLAs are further linked to other HLAs and larger-scale HLAs: the participants in this study are introducing a new slide (an HLA), interpreting a lecture (an HLA), and participating in a study (a larger-scale HLA).

Fourthly, Norris discusses **frozen mediated action**, which allows for analysis of relevant actions that have been performed at an earlier time but have become frozen in objects or the environment (Norris, 2016). An example would be the existence of slides that the lecturer has made to convey information or structure the discourse.

Norris's framework offers flexibility. For example, communicative modes are not pre-defined but can be applied to suit the needs of the study in question. Modes are not seen to have clear and strict boundaries either. (Norris, 2004). The value that flexibility brings to this study is further discussed in section 4.4.

I will use **chaining** as an additional tool for analysis beyond the multimodal (inter)action analysis framework. Chaining is a languaging practice and interactional pattern where different semiotic resources are used together, i.e., modes are chained and interlinked to one another, to convey meaning (Bagga-Gupta, 2000, 2002, 2004), and as Humphries and MacDougall (2000, p. 90) see it: a "technique for connecting texts such as a sign, a printed or written word, or a fingerspelled word". The same object or concept can be referred to with more than one communicative mode (e.g., signs, fingerspelling, writing, pointing), a strategy that creates associations between different ways of communicating (Quinto-Pozos & Reynolds, 2012).

Bagga-Gupta differentiates between three different levels of chaining: 1) Local chaining, where different semiotic resources are used sequentially (Bagga-Gupta, 2000), such as writing a word down and then pointing at it. 2) Event or activity chaining, which is tied to longer phases of the interaction (Bagga-Gupta, 2000), such as first reading instructions of a work phase and then being shown in practice the phase. 3) Simultaneous or synchronized chaining, where two language varieties or semiotic systems are used at the same time. Bagga-Gupta (2004) provides the following examples: when interpreting takes place; when the same person in the same activity switches between two languages; or when a person is focused on a written text and visually reads it by signing.

These multimodal and multilingual practices have been discussed especially in bilingual visually oriented settings. They are present in everyday interactions (Padden, 1996a, 1996b; Tapio, 2013) and, more specifically, in educational settings (Bagga-Gupta, 2000, 2002, 2004; Humphries & MacDougall, 2000). Concerning FinSL, Tapio (2013, 2020) focuses on classroom interaction, as well as Kelly et al. (2015) and Kujanpää (2016), who looks at multimodality and chaining during Finnish as a second language lessons for deaf students. Previously, I have looked into chaining practices in English-medium educational lectures interpreted into FinSL (Alapuranen, 2017). It has also been documented in monolingual, signed settings (Quinto-Pozos & Reynolds, 2012) and further in multilingual, virtual sites, where the languaging practices do not include the use of signed languages (Gynne & Bagga-Gupta, 2013; Messina-Dahlberg & Bagga-Gupta, 2016).

For the present study, chaining is conceptualized as the ways in which different semiotic resources or modes are connected in everyday life. It can be seen to have the functions of emphasizing and highlighting meaning (Bagga-Gupta, 2000; Humphries & MacDougall, 2000), identity positioning (Gynne & Bagga-Gupta, 2013), and creating cohesion (Alapuranen, 2017). I have also previously speculated that by focusing on the chaining sequences in interpretation, we might be able to learn something about the cognitive processes related to interpreting (Alapuranen, 2017). Chaining provides a tool through which concrete micro-communicative actions of languaging can be analysed in interaction, and what might seem to be "messy linguistic practices" (Tapio, 2013) turn into something patterned and complex.

In this study, communication is seen as inherently multimodal and situated. None of the modes has a priori primacy over another (Norris, 2004), but human actions are constructed through multiple modes' simultaneous and sequential use (Kusters et al., 2017; Norris, 2004; Streeck et al., 2011a).

Figure 1 below shows how the different settings present in this study are interconnected. This study considers especially the effect of a remote setting on the interactional situation. The fractured ecologies, but also the affordances brought by the remote environment, affect both the educational setting and interpreted setting, as well as the modes that the participants utilise.
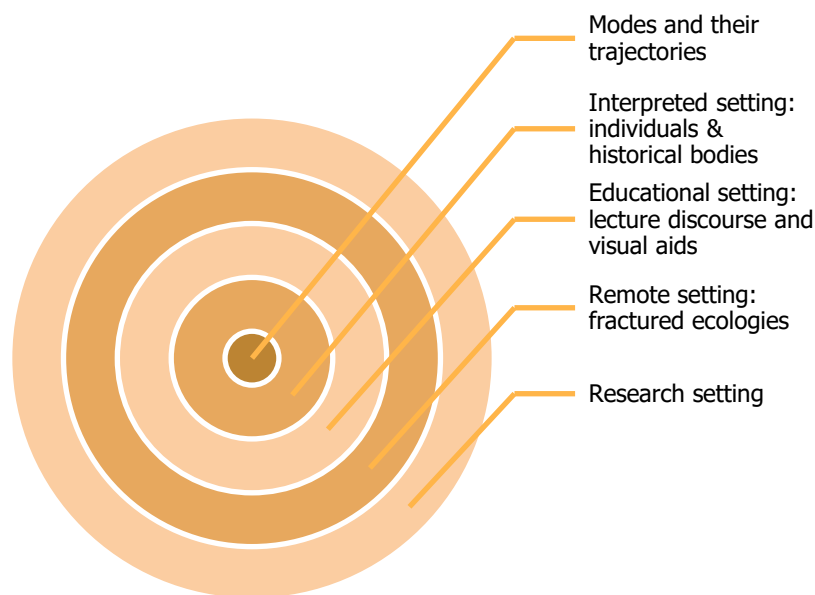
Figure 1: The settings considered in this study

The remote setting brings with it fractured ecologies between the participants (Luff et al., 2003), where the social actors are residing in two worlds simultaneously: their physical bodies exist in the physical world surrounding them and manage the technical appliances they are using and their virtual self in the shared virtual platform, affected by the "machines perspective" of them and the interaction (Keating & Sunakawa, 2011). Some modes used in the proximate world become obsolete or need to be altered to fit the frame of the virtual space; some of them and their use is shared between the two worlds. Due to the processes of shaping and renewing, modes have their own trajectories, which can be longer or shorter (Kusters, 2021; Tapio, 2020).

Also, the social actors have their own "trajectories": historical bodies, which consist of their skills, experiences, and habits (Scollon & Scollon, 2004) that are acquired through their lives and learnt in their communities (Blommaert & Huang, 2009). The participants in this study have long experience of educational interpreting working with spoken discourse accompanied by slides in on-site settings, but only because of the COVID-19 pandemic hitting in the spring of 2020 were they suddenly forced to move their work online along with their colleagues (see, e.g., De Meulder et al., 2021).

4 DATA AND RESEARCH METHODOLOGY

This study focuses on the following research questions:

> **RQ1 How do interpreters utilise visual aids in an online educational interpreting setting?**
>
> **RQ2 What are the differences between interpreters' decisions? How might those differences be explained?**

I collected two kinds of data from seven participants to answer these questions. For the primary data set, each participant interpreted a pre-recorded ST that was 25 minutes in length. Right after the interpreting task, I presented them with a transcript of the ST and instructed them to recall their interpreting task with the help of the stimulus and explain their process and decisions. This task-review data is used as a secondary data set. The participants also provided descriptions of their preparation process.

The planned data collection procedure was based on what is described in previous research (see, e.g., Ivanova, 2000; Shamy & De Pedro Ricoy, 2017), and it was piloted with the first participant P01. Based on the feedback from the first session, I made minor adjustments to the procedure. The adjustments are discussed below with each step of the data collection procedure.

Data collection was conducted in Zoom platform. It is a video-conference application allowing participants to communicate via audio, video, or both. They can also use the chat function or share their screen. The participants can adjust their screen view to some extent, for example, the ratio of participants' videos and shared screen content, whether they see participants who have their video turned off, and whether they see themselves as from a mirror or as the other participants see them. (Zoom, 2023a, 2023b.)

The collected data set was extensive: 175 minutes of interpreting task data and 319 minutes of task review data. The data collection aimed to provide information not only on the product of the interpreting but also on the historical bodies of the participants and the practices they had experienced, which could explain the observed actions.

Both data sets were addressed with a data-driven approach. Using the data as a starting point, I aimed to distance myself from preconceived ideas. However, similarly to the

participants in this study, as I was interacting with the data, the analysis became situated and was affected by my historical body and previous conceptualisations.

The data collection and analysis steps are summarized in Figure 2

below and explained in the following sections. I will first describe the characteristics of the participants and the source text recording. Then I will proceed to describe the instructions the participants received prior to the task, as well as the practical steps of data collection and analysis. Limitations and considerations are discussed along each step, and few points are presented separately in section 4.6.
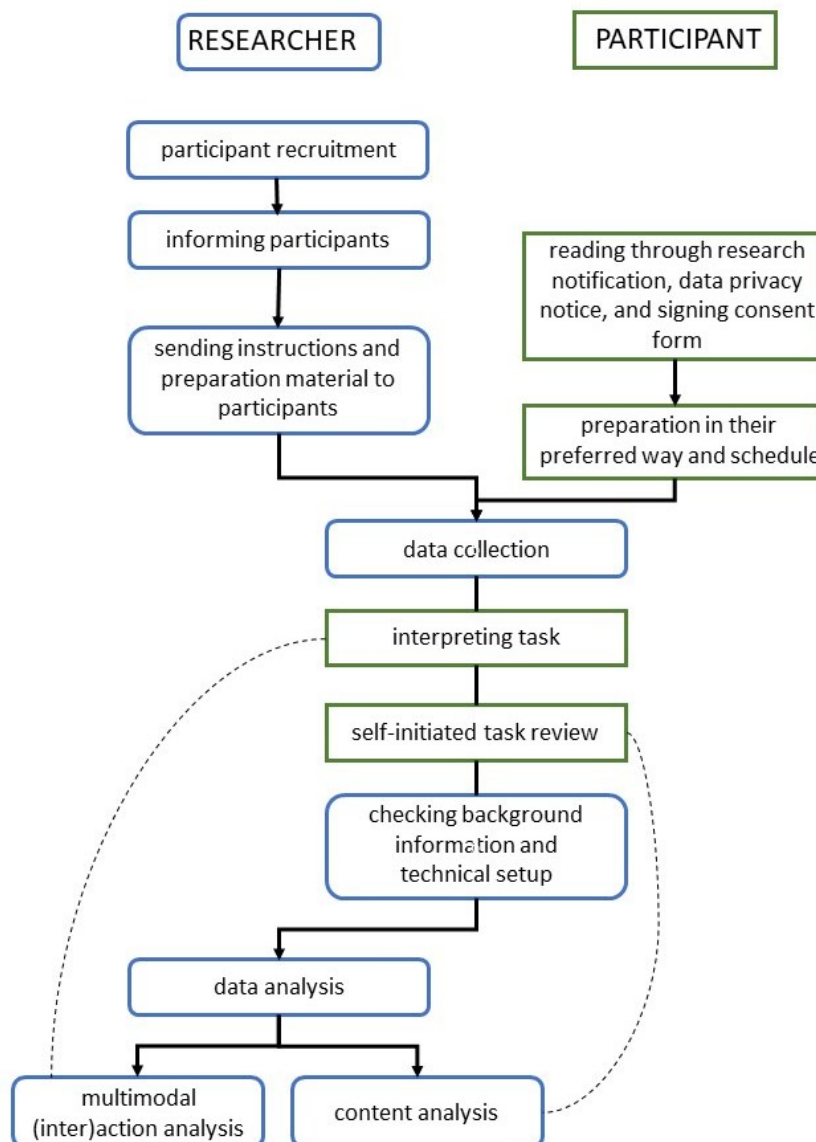
Figure 2: *The steps of data collection and analysis*

4.1 Participants

I recruited the participants using the following criteria: they currently work as sign language interpreters and have experience in higher education and remote interpreting on the Zoom platform. The criteria did not specify how much experience the participants should have in these settings, but their subjective judgment on their eligibility was trusted. However, I explicitly asked about their experience in these settings during data collection.

To avoid the effects of a potentially skewed sample, I recruited the participants by directly contacting people fitting the criteria and by posting an advertisement to a private Facebook group with nearly 700 members who all have studied sign language interpreting. When contacting potential participants directly, I consciously tried to reach out to people with varying professional backgrounds.

When recruiting the participants, I provided a short description of the topic of the experimental material. I asked the potential participants to evaluate whether the topic seemed to be something they would feel comfortable working on. They were not asked to detail their experience in advance, but it was left to their subjective consideration whether they felt they met the criteria. I decided on this approach to avoid my potential bias for participants. Possible participants were advised to reserve time for preparation and two hours for the data collection session.

As a result, seven participants (P01-P07) expressed interest and participated in the study. Three participants were reached via online advertisement, and four by contacting them directly. They were not promised nor received compensation to take part in the study.

I provided each participant with a research notification (Appendix A, in Finnish), a data privacy notice, and a consent form (Appendix B, in Finnish). Research notification did not disclose the exact focus of the study, which aimed to minimize the effect of knowing the focus might have on the participants' behaviour (see section 4.6 below for discussion regarding P01).

As a part of the data collection, the participants were asked background questions relating to their work experience and technical set-up during the task (see Appendix C). Each participant had more than 15 years of interpreting experience (SLI). They had

varying amounts of experience from higher educational settings: one participant had 1–4 years, another participant 5–9 years, three participants 10–14 years, and two participants at least 15 years. Their subjective estimation of the frequency they worked in higher education settings varied from daily to monthly.

Six of the seven participants had three years of experience in remote interpreting since the spring of 2020 and the start of the COVID-19 pandemic. One participant also had previous experience with remote interpreting. The participants' subjective estimation of the frequency of working in remote interpreting settings varied between weekly (n=6) and monthly (n=1). The frequency of working remotely via Zoom varied between weekly (n=5) and monthly (n=2).

The primary aim of the criteria for participant recruitment was to achieve a sampling of interpreters who would feel confident working in this kind of experimental setting to alleviate the potential effect of working in an experimental setting instead of a naturally occurring one. However, the criteria affected the sampling by providing quite a homogeneous group, for example, regarding their work experience, as described above.

4.2 Used source text

The ST was delivered in Finnish by Marjo-Riitta Anttila from the University of Jyväskylä. It was an authentic recording of a lecture originally delivered as a part of a research methods course aimed at students working on their thesis. The ST consisted of the first part of a lecture and focused on writing a research plan. In the original setting, some students were present on-site, and some participated remotely. The use of the ST was explicitly negotiated with the lecturer, and a written agreement on the use of the experimental material was signed.

The recording of the ST was readily but not publicly available, and I deemed the quality of sound suitable. The speech delivery rate of the spoken ST was 96-97 words per minute (wpm), which falls within the acceptable input rate of 95–120 wpm (Pöchhacker, 2004). The spoken ST delivery was high in orality (see Shlesinger, 1989).

The spoken text delivery was accompanied by a set of eight slides with visual stimuli that fit the research aims (see Table 1, slides numbered according to the preparation material). The spoken and visual STs had a low occurrence of specialised terminology.

The topic was deemed familiar or easily approachable for participants who met the previously described criteria.

The original recording was edited to include only the audio and the slides of the segment used as a ST. I edited out or muted the sequences where other people besides the lecturer were speaking. These sequences were either inaudible or I could not receive the necessary consent from the lecture participants.

The experimental material included a single coherent lecture section and was 25 minutes long. Table 1 below shows how long each slide was visible, their headings, and a description of the visualisation presented on the slide.

Table 1: *Summary of the Visual ST - Slides' Features*

Slide	Heading	Visualisation	Duration
#3	Qualitative research process	linear process	0:00:12
#4	Research plan	circular process	0:05:58
#5	Structure of a research plan	floorplan and list	0:02:41
#6	Introduction	floorplan and list	0:02:06
#7	Theoretical framework	floorplan and list	0:07:40
#8	Research question	floorplan and list	0:01:40
#9	Conducting the study	floorplan and list	0:01:24
#10	Research ethics	floorplan and list	0:03:21
			0:25:02

While deciding on the experimental material, I carefully considered the length and content of the recording. In simultaneous interpreting, the quality of interpreting declines after 15–20 minutes (cf., Turner, 2005) which usually leads to interpreters alternating between the roles of rendering and non-rendering interpreter to ensure quality. Also, at least in the Finnish context, higher education settings are environments where the interpreters usually work as a team of two instead of working alone (see, e.g., University of Jyväskylä, 2019). These aspects combined; the experimental setting probably differed from the actual working practices in the field. However, having participants work in teams would have added additional factors to the study, such as the aspect and effect of teamwork, and complicated the analysis unnecessarily for this study.

4.3 Preparation material provided prior to the task

After agreeing to participate in the study, the participants received instructions and preparation material for the interpreting assignment. The instructions included a general description of the context of the recording (length, topic, directionality) and technical aspects related to it. They also received a brief on an imagined deaf student to whom they should target their interpretation. At this stage, they were also informed that they would not have the possibility to pause or rewind the recording once the task started.

The participants could decide how much time they would use for preparation and were free to choose how to prepare. They were, however, instructed to shortly record their preparation process with the help of the following questions: How long did you use for preparation? How did you prepare? Was there something that caught your eye or that you paid extra attention to during the preparation?

The participants received a slide set used during the lecture, with two extra slides in the beginning to contextualise the setting. Based on the feedback from the data collection session with P01, I provided the rest of the participants with seven concepts not visible on the slides but mentioned in the spoken text. Some of these were concepts that P01 identified as potentially challenging, and some were listed based on my assessment.

The data collection sessions started with going through the documents if need be. Participants could ask general questions related to the study. I also explained the steps of the data collection session and asked a few background questions. After dealing with the practicalities, I offered them the possibility for a short break before starting the interpreting task.

4.4 Interpreting task and analysis

For the interpreting task, I shared my screen with the experimental material and stopped my video. As soon as the participant stated they had adjusted their screen settings to their liking and were ready to start, I pressed record and play. The interpreting task took approximately 25 minutes. I made observations during the task. After the task, the participants were offered the possibility for a short break.

The interpreting task was analysed using the Multimodal (inter)action analysis framework (Norris, 2004, 2019). The first step in data analysis was delineating the data

(Norris, 2019). This phase revealed the extensiveness of the collected data, and I was required to limit the scope. After repetitively watching the interpreting task recordings and reading my observational notes, I focused my analysis on slides 3 and 4. During these approximately six minutes of data for each of the seven participants, it is possible to identify sequences where all participants utilise the visual aid in their interpretation, but also see individual variation.

Another reason for limiting the analysis to these two slides was that the remaining six slides all consisted of a picture of a floorplan, on top of which text was gradually added, accompanied by a list of items (the general layout of slides 5-10 is visible in Figure 19, Figure 20, and Figure 21). This meant that these slides were a combination of scriptural and figurative visual, i.e., the illustration had to be explained (Rowley-Jolivet, 2002), which resulted in an even more substantial overlap of visual and spoken STs text. Therefore, identifying the instances when the interpreters utilised the slides instead of the spoken ST would have required a different approach.

The second step was selecting data pieces for microanalysis by demarcating HLAs (Norris, 2019). For this, I used ELAN (2023, Version 6.2.), which allows time-coded multimodal annotation for video-recorded data. For each participant, I annotated the spoken and visual source text on their own tiers, i.e., the frozen mediated actions, and on a third tier, I annotated the HLA of referring to the slides in their interpretation.

The third step of practical implementation of the framework consists of multimodal transcriptions of HLAs, which is done by considering the communicative modes and the LLAs (i.e., the mode's smallest meaning-making units) (Norris, 2019). As described previously, HLA consists of chains of LLAs, which can be sequential or simultaneous (see Chapter 3). I started the transcription of the modes and LLAs in ELAN. However, in the end, I felt that it did not suit my needs: In multimodal interaction analysis, modes are not seen to have clear and strict boundaries (Norris, 2004), and the possibility to zoom in and out of modes and alternating specificity, was vital for my analysis and transcription. For example, at times, it was enough to annotate that a sign was being used, whereas, in others, the location where the sign was produced was the necessary level.

However, while working in ELAN, I felt the need to set my tiers uniformly from one participant to another, which at some stage, became a hindrance. At that point, I decided

to change my transcription method: I finished it by using screenshots and detailed descriptions of what was happening in the sequence, which also helped me to control the scope of my analysis. My transcription started with manual signs, classifier constructs, pointing gestures, and body shifts. Then where it was possible to observe the use of gaze and its target and, when applicable, mouthing. In parts, I also described how these were produced or their locations.

Although I stepped away from the immediate proximity of the video data, by utilising still frames and text, I systematically referred back to the video data throughout the analysis process. As multimodal transcription is already a stage in the analysis, and optimally the analysis would be embedded in the transcript itself (Norris, 2019, p. 199), this approach further helped me produce my analysis.

The data-driven approach of this study and the previously described process drew my attention to another HLA: pointing to the slide, which is embedded in the larger HLA of referring to a slide. I analysed pointing to the slide for the whole interpreting task for all the participants. This part of the analysis focused on the handshape, handedness, duration of pointing gestures, and the chaining of other modes with pointing. Again, a combination of ELAN, screenshots, and detailed written descriptions was used.

The frozen mediated actions, i.e., the visual and spoken STs annotated in ELAN, were also partly analysed. Their features were considered concerning the TT renditions, and relevant findings are discussed alongside the rest of the analysis in Chapter 5. The findings regarding slides 3 and 4 are presented in sections 5.1 and 5.3, and the findings related to pointing are presented in section 5.4.

4.5 Self-initiated task review and analysis

Following the interpreting task, the participants conducted a self-initiated task review (e.g., Færch & Kasper, 1987; Shamy & De Pedro Ricoy, 2017). The purpose of this data set was to supply complementary data on the participants' previous knowledge of the topic, their preparation process, perception of the task, personal skills, and knowledge. Even though the aim of my study is not as such focusing on the cognitive processes of the interpreters, the processes are part of the practices, and the trajectories of those practices, or at least can shine a light on them. All of these can affect the

strategies interpreters employ when incorporating visual aids into their interpretation (see, e.g., Hansen, 2005; Napier, 2004).

Ericsson and Simon (1993) mention two ways to enhance participant's recall in retrospective task review: either presenting the participant with the transcription of the ST or accompanying that with the recorded TT production. They also discuss the use of probes during the task review. These can either be general instructions or directed to receive the desired information. Ivanova (2000) concludes that presenting the participants with the ST and observational notes is an effective procedure. It allows the verification of the protocols by comparing them with the participants' interpreting output, and reduces the risk of participants inferring "what they *may* or *must have* thought" (Ivanova, 2000, p. 33, emphasis added). If both ST and TT are presented, the participants might end up justifying their decisions instead of describing them (Dimitrova & Tiselius 2009, as cited in Shamy & De Pedro Ricoy, 2017, p. 53). The use of the ST text instead of the TT production spares the participants of any possible embarrassment resulting from flaws in the TT (Ivanova, 2000).

At the beginning of the task review, I told the participants I was interested in how they utilised the slides during the interpreting task. This can be seen as directed probing (Ericsson & Simon, 1993). However, as I provided the participants with a transcript presenting both spoken and visual STs, I also encouraged them to try and recall whatever they were thinking during the interpreting task and what kind of decisions they made.

The participants initiated the task review (Færch & Kasper, 1987). They read the transcription one segment at a time and reported the thoughts that occurred to them during the interpreting task. I only interfered if I needed to ask for clarification or if, while observing, I noticed something that they did not recall by themselves. I followed a process similar to Ivanova (2000). The only time constraint for the retrospection was that the participants were advised to reserve two hours for the whole data collection session. The time used for the retrospection varied between 27 and 71 minutes.

After going through the ST, I asked them to describe their preparation process, and we went through some background questions if these had not come up during the previous discussions. The template for the background information sheet can be found in Appendix C.

The self-initiated task reviews were recorded on the Zoom platform. The recordings were then transcribed, first automatically, using Microsoft Word's dictation tool. Then I went through them manually, anonymized them, and enriched their multimodality by adding information about the used signs and gestures. The multimodal aspects were only noted in relevant parts due to the time-consuming nature of multimodal transcription. The transcription key can be found in Appendix E.

I adapted some points from the multimodal (inter)action analysis framework to analyze the task review data. I delineated data by creating summaries of the transcripts. As Norris (2019, p. 122) states, "most important [...] is to be careful and realize that *too much detail is not helpful*". The entries in the summaries shortly described the points the participants made. I then used the summaries to disambiguate the data set and identify recurring themes.

I then coded the transcriptions according to the themes. The process of going back and forth between the transcription, summaries and themes aimed to improve the reliability of the created categories.

4.6 Considerations on data collection and analysis

To be as consistent in the data collection as possible, I created a script that I followed. However, if the participants asked a direct question during the instructions, I answered those even outside the script. I also attempted to deliver the instructions in a conversation-like manner to make the situation feel more naturalistic instead of an experimental design (Shamy & De Pedro Ricoy, 2017). The participants were nevertheless aware of the experimental nature of our meeting, and some even brought it up explicitly during the meeting.

Above, in section 4.1, it was mentioned that prior to completing the interpreting task, the focus of the study was described only on a general level to the participants. However, one of the participants, P01, was aware of the focus of the study in advance. P01's data set was used to pilot the data collection procedure, and due to scheduling, I opted to use a person I could contact personally and who was able to agree on data collection soon. During the task review, it was mentioned and discussed that P01 was familiar with my study's aims. P01 brought up that even though they were aware of

what I was going to analyse, they deliberately paid no more attention to those issues than they would have otherwise.

During the task review, also P06 mentioned that they had a premonition of the study's focus. Due to this, during the preparation, they had paid specific attention to the figures and pictures on the slides. They had considered how to utilize them in their interpretation more closely than on usual assignments. However, based on their account, their decisions during the interpreting task were similar to what they would have produced otherwise.

In the consent form, the participants were asked in detail how the data collected from them could be used, for example, when presenting the study. Six participants agreed that, for example, video clips and screenshots of the data could be used without alteration. One participant agreed that excerpts from the data could be used if altered.

During the data analysis, I realized that the consent form was formulated, especially with the interpreting task data in mind, and I did not specify how the participants wanted their task review data to be treated. Therefore, I will not link participants' interpreting task data directly to the task review data in this data. When discussing data excerpts that show themes from the task review data, I will use randomized letters (A-G) to refer to the participants.

5 FINDINGS OF THE STUDY

In the following, I will first provide an overview of when the participants incorporated slides 3 and 4 into their interpretations (section 5). I will then focus more closely on participants' decisions during slides 3 (section 5.2) and 4 (section 5.3). These two sections show both similarities among the participants as individual variation and consistency. Then I will concentrate on a single mode of pointing in the whole interpreting task data (section 5.4). The topics of sections 5.2., 5.3., and 5.4 will also be considered in light of task review data. Section 5.5 will present preliminary themes from the task review data for the whole interpreting task and describe the participants' explanations for their decisions.

In the following sections, I will discuss my findings with the help of screenshots captured from the interpreting task data. In order to aid the reader in following the analysis, the data excerpts show only the modes through which the incorporation of the slide is happening. The images below are sometimes accompanied by arrows or other indicators to describe, for example, movement. The examples include the spoken ST utterance in Finnish, which is interpreted. The translation of spoken ST text is provided in *italics*. When discussing the FinSL signs that participants produced, these are written in CAPITAL LETTERS. Translations of the Finnish Sign Language or spoken Finnish are written in *ITALICS* or *italics*, respectively. The translations of slides that I refer to in the analysis are described at the beginning of each section. The original slides in Finnish can be found in Appendix D. For the analysis of the task review I present excerpts from the data. The transcription key for this part can be found in Appendix E.

5.1 An overview of incorporating slides 3 and 4 to interpretation

The examples and the adjoined descriptions in the following sections will show how the participants use multiple modes to incorporate the visual ST into their TT renditions. Before diving into those, Table 2 below provides an overview of the points where the participants incorporated the visual ST into their TT renditions during slides 3 and 4. Sections 5.2 and 5.3 will primarily focus on those three sequences where all the participants incorporated the slide somehow.

Table 2: *Where Participants Incorporated the Visual ST into Their TT Renditions during Slides 3 and 4.*

visual ST/slide	spoken ST/time	P01	P02	P03	P04	P05	P06	P07
#3 linear	0:00-0:19	x	x	x	x	x	x	x
transition	0:20-0:27						x	
#4 circular - intro 1st	0:28-0:45	x	x	x	x	x	x	x
intro 2nd	0:46-1:02	x	x	x	x	x	x	x
#4 continues	1:03-1:16						x	x
	2:22-2:23				x			
	3:13-3:27						x	
	3:47-3:59	x					x	
	4:16-4:21						x	
	4:22-4:53	x		x			x	x

I acknowledge and want to remind the reader that the table above merely shows at which points sequences where incorporation is made occurred for each participant. The frequency might be considered an indication of individual preferences and practices but nothing more. However, the frequency does not tell us about the complexity or the effectiveness of the incorporation done by each participant.

However, we might be able to interpret from the table that when a new slide is introduced, all participants incorporate the visual aid into their interpretation. It also seems that P06 was incorporating the visual ST most consistently. Altogether they produced a TT rendition which included features(s) from the slides nine times. Notably, two participants (P02 and P05) do not incorporate the slides beyond the three sequences discussed above. Others make reference at different points, although we see a cluster of four participants incorporating the visual source during a spoken ST sequence (4:22-4:53) where there is explicit mention in the spoken ST: "viimeinen vaihe" (*last phase*) referring to the fifth text box on the slide.

5.2 Analysis of interpretation of slide 3 presenting a linear process

The first slide was visible for only 12 seconds. It illustrates the progress of qualitative research as a linear process, with four phases: research topic/research question, data collection, data analysis, and finally, findings and conclusion. Figure 3 below shows a

modified version of the original slides. It contains the relevant part, i.e., the heading and illustration, which are translated. The original slide can be found in Appendix D. According to Rowley-Jolivet's typology (2002), this slide can be described as a graphical visual. The main feature of the slide is the representation of an abstract concept, i.e., the research process.

QUALITATIVE RESEARCH PROCESS

Research topic / Research question → Data collection → Data analysis → Findings, conclusions
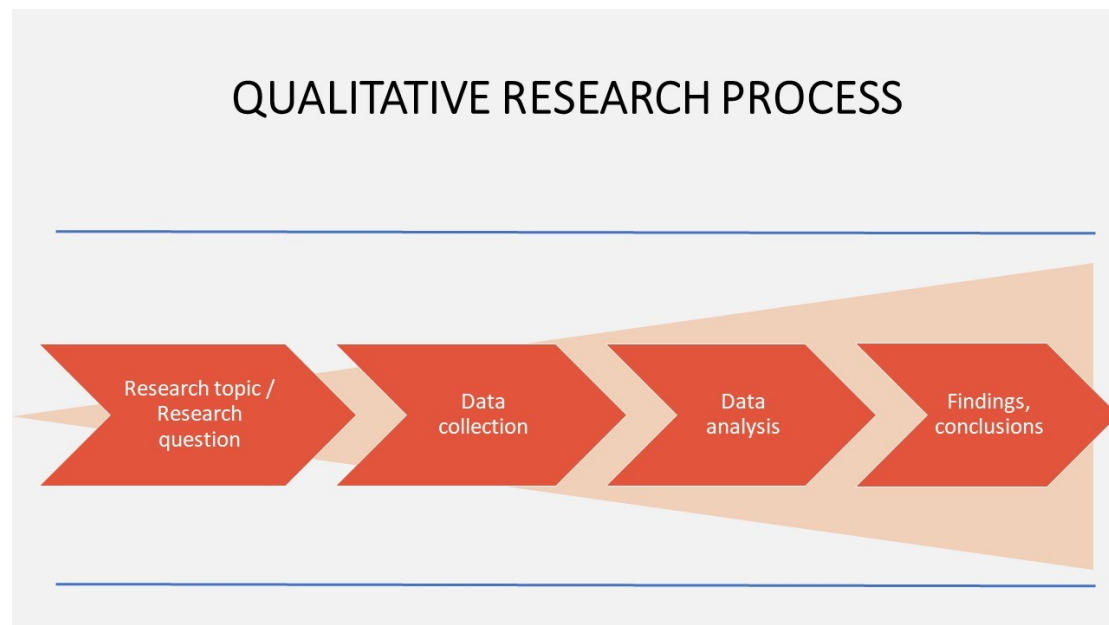
Figure 3: *Slide 3 Presenting a Linear Process*

The spoken ST linked to the visual ST was: "Elikkä se tutkimus lähtee siitä ideasta, ja sen aineiston tuottamisen kautta mennään analyysiin ja tulokset ja johtopäätökset." [*So, research starts with the idea and, through the data production, moves to analysis, and findings and conclusions.*] This single utterance, during which the four phases are explicitly named, was followed further by an introductory phrase that presented the following slide.

Even though the first slide was visible only for a short amount of time and discussed only briefly, each participant integrated the visual image or parts of it into their interpretation. The participants incorporated the slide by using body shift, classifier constructions, combining the two, or by using list buoys and discourse markers.

5.2.1 The use of body shift to refer to the linear process

Figure 4 shows how P01 shifts their body from left to right in reference to the second, third, and fourth phases presented on the slide. These phases are also named in the

spoken ST. In this example, body shift is the primary mode when incorporating the visual ST on the slide to the interpretation.

spoken ST	"aineiston tuottamisen kautta	mennään analyysiin,	ja tulokset ja johtopäätökset"
translation	*through the data production*	*moves to analysis*	*and findings and conclusions*
visual ST	2nd phase	3rd phase	4th phase
body		body shift from left to right	

Figure 4: Use of Body Shift to Refer to the Linear Process

All the participants used body shift in their rendition of this ST utterance. However, for three participants (P01 included), it was the primary mode for incorporating the visual ST into their interpretation. Other participants also made use of other modes, and examples of these more complex sequences will be discussed below.

5.2.2   The use of classifier construct to incorporate part of the process

Figure 5 below presents P02 incorporating a part of the image on the slide into their interpretation. At the start of the interpreting task, P02 signs TUTKIMUS ALKAA KUINKA (*RESEARCH START HOW*), then produces the sign IDEA (*IDEA*) and a classifier construct. Using a classifier construct not only locates IDEA in the sign space and allows referring to it later, but it also incorporates the image visible on the slide into the interpretation.

spoken ST	"siitä ideasta"	
translation	*with the idea*	
visual ST	1st phase	
classifier		cl-phase of the process
sign	IDEA	
	IDEA	

Figure 5: *Use of Classifier Construct – Part of Process*

5.2.3 Local chaining of classifier construct and body shift

Figure 6, Figure 7, and Figure 8 are all part of the same sequence, following one another, respectively, and showing a more complex local chaining sequence than the previously discussed. In the first part of the sequence (Figure 6), we see P06 incorporating the linear process presented on the slide to their interpretation. The first image on the left shows the starting position, and the image on the right shows the end position. In the first image, there is an arrow describing the movement of the hands. The use of a classifier construct in this way indicates proceeding with the process.

spoken ST	"…mennään…"
translation	*moves to*
visual ST	3rd phase
classifier	cl-process
body	body shift from left to right

Figure 6: *Use of Classifier Construct - Process*

The classifier construct is followed by a body shift from left to right in two increments (Figure 7 below). This process is visible when comparing the three images. They show that P06 treats "findings and conclusion" as separate steps, even though they are both presented to fall within the same final phase on the slide. P06 is not the only participant to treat the fourth phase, "findings and conclusion", as two separate steps, but also three other participants differentiate the fourth phase into two separate ones. This is likely due to the features of the spoken ST, where the three items are delivered as "analyysiin ja tulokset ja johtopäätökset" (*to analysis and findings and conclusions*). The repetition of the coordinating conjunction "ja" (*and*) in the spoken ST results in all three units being treated as equivalent to one another in the TT rendition. This shows that both the visual ST and the spoken ST affect the TT rendition.

spoken ST	"...analyysiin	ja tulokset	ja johtopäätökset"
translation	*analysis*	*and findings*	*and conclusions*
visual ST		4th phase	
body		body shift from left to right	

Figure 7: Use of Body Shift Between Two Phases

In the sequence's third and last part Figure 8, P06 again utilises a classifier construct. This time, however, the classifier construct refers to the whole linear process, which includes multiple yet indeterminate number of steps. The NDH remains in the initial position as the DH moves from left to right. The hand moves down and up repeatedly, in quick succession, descending with every repetition.

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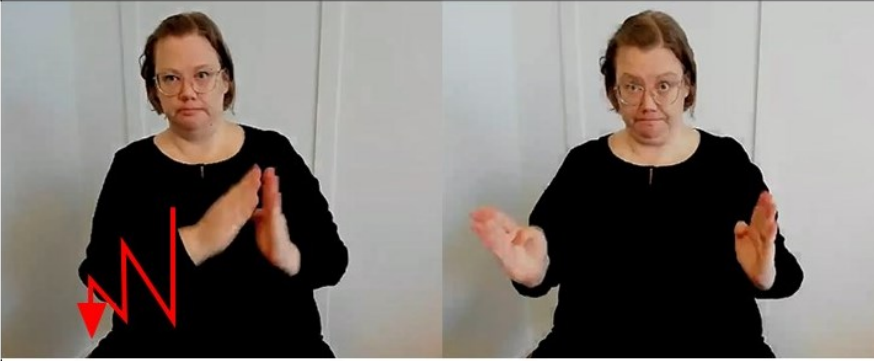
spoken ST *translation*	
visual ST	the whole linear process
classifier	cl–whole process

Figure 8: *Use of Classifier Construct - Whole Process*

The two classifier constructs by P06 described refer to different aspects of the visual ST. In the first one, both hands are engaged in a steady movement accompanied by body shift. As a result, the classifier construct refers to progress in the linear process until the third phase presented in the visual ST. The second classifier construct, on the other hand, refers to the whole process. The NDH stays in the initial position, and the DH produces an indefinite number of phases. This classifier construct, produced at the end of the TT rendition, sums up the whole TT rendition from the first phase to the last.

5.2.4 Local chaining of list buoys, discourse markers, and body shift

Further comparison of the TT renditions for this single ST utterance reveals yet another way the visual ST is incorporated. Three participants utilise list buoys in their renditions. None of them uses list buoys to refer to each of the phases presented on the slide, but only partially. However, each of them makes use of body shift, similar to the examples presented above. Another similarity these three renditions have in common is that all of them also create cohesion between the STs and the rendition by using signs such as ENSIN (*at first*) or SITTEN (*then, followed by*).

Below, Figure 9 shows the combination of list buoy and then explicitly naming the first phase of the process. The repetition of the list buoy creates lexical cohesion within the TT rendition. The TT rendition continues directly in Figure 10. List buoy FIRST-OF-LIST

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is followed by SECOND-OF-LIST and then the already familiar use of body shift to indicate the remaining two phases.

spoken ST	"siitä ideasta"			
translation	*with the idea*			
visual ST	1st phase			
list buoy	FIRST-OF-LIST			FIRST-OF-LIST
sign		ENSIN	IDEA	
		first	*idea*	
body				

Figure 9: Use of List Buoys - FIRST-OF-LIST and explicit naming

spoken ST	"ja sen aineiston tuottamisen kautta		mennään analyysiin	ja tulokset ja johtopäätökset"
translation	*and through the data production*		*moves to analysis*	*and findings and conclusions*
visual ST	2nd phase		3rd phase	4th phase
list buoy	SECOND-OF-LIST			
sign				
body		body shift to the left		

Figure 10: Use of List Buoys - SECOND-OF-LIST and body shift

5.2.5 Slide 3 in the light of task review data

As slide 3 was visible only for 12 seconds and it was the start of the interpreting task, the participants had only a few comments. Based on preparation, each of them recognised the slide. However, only one of them said that they made a conscious decision to rely on the linear process:

> [5]   mutta että ne ne nyt oli tuossa että

but that those were there that
[6]   *miten tää tutkimus etenee   *
        *how this research proceeds   *
        hand moving from left to right
[7]   että se oli just niinku selkeä apu näistä kalvoista.
        that it was like a clear help from these slides.
[9]   ett, että se menee näin päin ja ja ne on tommoiset selkeät
        that that it goes this way and and those are that kind of clear
[10]   kokonaisuudet.
        entities.
(A, rows 5-10)

In addition, during the task review, three more participants mentioned how they thought that while interpreting, they had produced the TT rendition as linear, and one more referred to its phases.

What becomes evident when comparing the task review data with the interpreting task data is that even though only one participant explicitly mentions making the conscious decision to incorporate the linear process, all participants do so, at least partly. Also, during the task review, each participant produced a classifier, sign, or gesture that referred to the linear process. This could imply that the participants share the conceptualisation presented on the slide and that this is a practice they are familiar with.

5.3 Analysis of interpretation of slide 4 presenting a circular process

The second slide was visible for nearly six minutes. Figure 11 below shows the translated slide (see Appendix D for the original). The slide focuses on writing a research plan and displays it as a circular process. The sections of the writing process are accompanied by the concrete actions students are expected to perform. This slide can be described as having features of both graphical and scriptural visuals (Rowley-Jolivet, 2002). It contains more text than the previous one. However, its layout and use of colours guide the attention to a circle's existence.
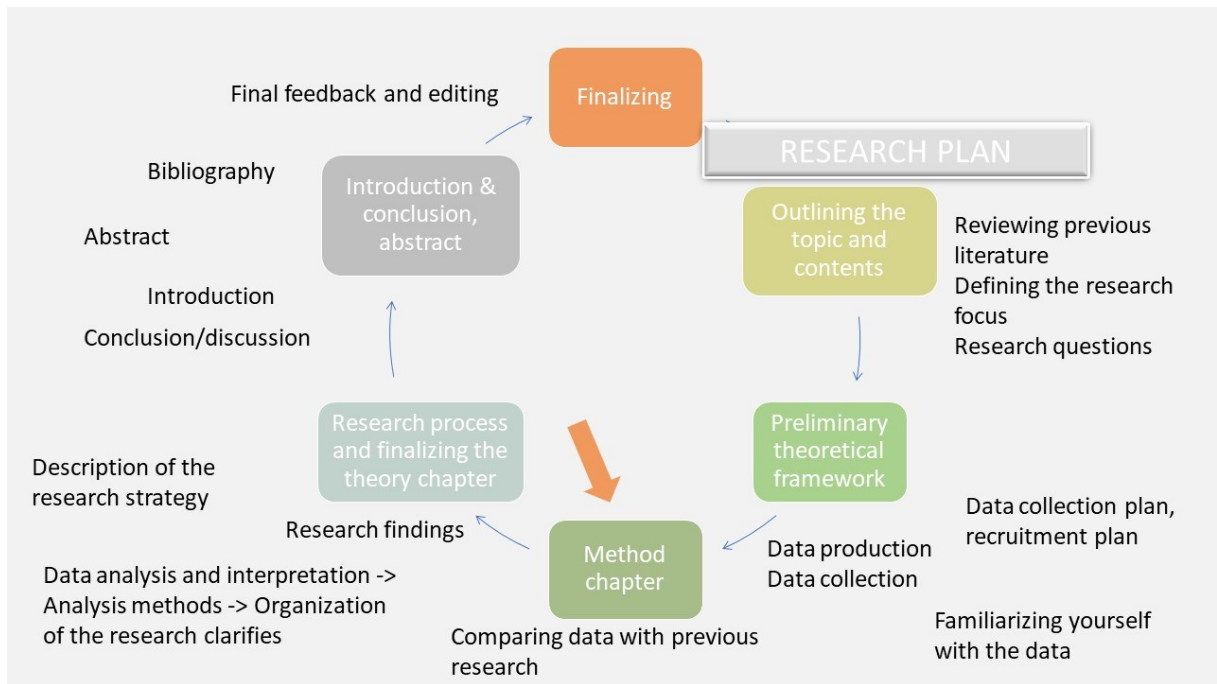
Figure 11: *Slide 4 Presenting a Circular Process*

The spoken ST the lecturer produces during the introductory phase is:

> Elikkä tässä tää ympyrä ja siinä olevat asiat niin ne on, ne on kohtia, mitä te kirjoitatte sinne... vaikka graduun tai tutkimussuunnitelmaan tai tai... tai raportteihin. Elikkä elikkä tuota siinä on aineiston sisällön hahmottelu alkaa. Teoreettinen viitekehys alustava, metodiluvut, tutkimusprosessi, teorialuvun viimeistely ja johdanto ja tiivistelmä.
> *So here is this circle and the things in it, they are the parts, you will be writing in… for example, MA thesis or research plan or or… or reports. So, so, there the outlining of the data contents starts. Theoretical framework preliminary, method chapters, research process, finalising the theory chapter and introduction and abstract.*

In the following section, I will first examine the incorporation of the visual ST concerning the first half of the spoken ST and then continue with the second half. Both sections show different patterns.

5.3.1 Introducing a slide by chaining modes

spoken ST	"Elikkä tässä tää ympyrä ja siinä olevat asiat niin ne on, ne on kohtia,…"				
translation	*So here is this circle and the things in it, they are the parts…*				
visual ST	circular process				
pointing	pt-slide				
classificator			cl-parts of the circle		cl-circle
		YMPYRÄ		ASIA	
		circle		*thing, item*	
mouthing		'ympyrä'			no mouthing
gaze	to the camera	to the sign			to the camera
	length: 368 ms				

Figure 12: *Introducing Slide 4 and Drawing Attention to It*

Participants' TT renditions share similar features, some of which are displayed in Figure 12 above. At the start of their TT renditions, five of the participants make explicit reference to the existence of the slide, drawing attention to it: Three participants point to the slide (see Figure 12 above; pointing will be discussed more closely later in section 5.4). Two use lexical items that draw attention to the slide: NÄKYÄ NYT (*VISIBLE NOW*) and NYT KUVA (*NOW PICTURE*), and a third one first signs NÄHDÄ (*SEE*) and then locates the slide in the sign space in front of them. Figure 13 below shows the start of the rendition for P06 displaying this practice. Two of the participants do not draw attention to the existence of the slide visible next to them in the remote environment, although they do make reference to its contents, as will be discussed below.

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spoken ST	"Elikkä tässä…"
translation	*so here is*
visual ST	circular process

pointing			pt-screen/slide
sign	NYT	KUVA	
	now	*picture*	

Figure 13: Drawing Attention to Slide 4 by Pointing to the Screen

spoken ST	"…tää ympyrä ja siinä olevat asiat niin ne on, ne on kohtia,…"
translation	*this circle and the things in it, they are the parts…*
visual ST	circular process

classifier	cl-circle	cl-parts of circle		cl-parts of circle
			pt-sign space	
mouthing			'tä-'	

Figure 14: Introducing Slide 4 and Its Contents

Apart from the explicit reference to the slide, the use of classifier constructs characterises the renditions of the first half of slide 4 across participants. Each of them uses at least two kinds of classifier constructs: one to refer to the whole circle and another one either specifically or generally to refer to the parts of the circle. For the latter classifiers, a common feature they all shared was that the classifier construct was moved in the signing space's vertical plane to create a circle's outline. For some, the created circular shape was more complete than for others. None of them, however,

replicated the slide's layout precisely by producing the classifier construct six times to copy the number of text boxes on the slide.

Towards the end of their TT rendition, the participants, apart from P05, again made reference to the slide by producing a classifier construct (circle or parts of the circle) or by pointing to the slide at the end of their rendition. This was yet another shared feature.

5.3.2 The circular process presented as a linear or a circular one

When continuing to the second half of the spoken ST utterance, where the lecturer explicitly lists the items displayed in the boxes on the slide, we still see similarities but also start to see more individual variation. Five of the participants use body shift during their TT renditions. P01 is the most consistent one with this: They start with a list buoy. This is followed by body shift which is used consistently throughout the rendition (five times altogether) and then ends first with a classifier construct referring to the parts of the circle, and then another classifier construct for the whole circle. This is displayed in Figure 15 below.

spoken ST	Elikkä elikkä tuota siinä on aineiston sisällön hahmottelu alkaa. Teoreettinen viitekehys alustava, metodiluvut, tutkimusprosessi, teorialuvun viimeistely ja johdanto ja tiivistelmä."			
translation	*So, so, there the outlining of the data contents starts. Theoretical framework preliminary, method chapters, research process, finalising the theory chapter and introduction and abstract.*			
visual ST	1st text box	2nd text box	3rd text box	4th text box
list-buoy	FIRST-OF-LIST			
body		body shift from left to right--->		
classifier				

visual ST	5th text box	the whole circular process		
list-buoy				
body	---> body shift from left to right			
classificier			cl-parts of circle	cl-whole circle

Figure 15: *Use of Body Shift to Refer to the Circular Process*

P03, P05 use body shift in their renditions to indicate moving from the contents of from text box to another. However, they use it only at the beginning to indicate the shift from "aineiston sisällön hahmottelu" (*the outlining of the data contents*) to "teoreettinen

viitekehys" (*theoretical framework*). P07 expands on this and produces body shift at these points and again at "tutkimusprosessi, teorialuvun viimeistely" (*research process, finalising the theory chapter*). P02 uses body shift once: They first produce a list buoy SECOND-OF-LIST, then move their body to the right, followed by TEORIA VIITEKEHYS ALKAA (*THEORETICAL FRAMEWORK START*). All of them, at least partly, change the circular process into a linear one in their renditions.

P04 and P05, on the other hand, follow the circular structure presented on the slide. Each of them ahs their own approach, however. P04 produces the classifier construct of a text box which then moves from one location to another. This takes place between the first and second, as well as the third and fourth boxes. They also make use of list buoys when referring to the first and third text boxes. Figure 16 presents an example from the beginning of the TT utterance. In the first image, P04 produces a list buoy. The second image represents the content of the text box. The third and fourth images display the classifier construct moving from the first text box location to a second one. These are placed according to the signer's perspective as they are looking at the slide. The fifth image of the figure shows the extended final hold on NDH on the location of the third text box while the DH continues.

spoken ST	"Elikkä elikkä tuota siinä on aineiston sisällön hahmottelu alkaa. Teoreettinen viitekehys alustava,…"			
translation	*So, so, there the outlining of the data contents starts. Theoretical framework preliminary,…*			
visual ST	1st and 2nd text box on the circular process			
list buoy	FIRST-OF-LIST			
sign		AINEISTO SISÄLTÄÄ HAHMOTTAA		TEORIA VIITEKEHYS
		DATA CONTENTS OUTLINE		*THEORY FRAMEWORK*
classifier			cl-text box 1 → cl-text box 2	
				NDH: extended final hold

Figure 16: Use of Classifier Constructs to Refer to the Circular Process

Later, after moving the classifier construct to the location of the fourth box, P04 continues to produce the signs in the same location. Also, P03 and P07 produce the same kind of incorporation of the visual ST into their interpretation regarding the fifth text box. Below in Figure 17, is an example from P03's TT rendition.

spoken ST	"…teorialuvun viimeistely ja johdanto ja tiivistelmä."	
translation	*…finalising the theory chapter and introduction and abstract.*	
visual ST	4th and 5th text boxes on the circular process	
location	neutral sign space	location mirroring the fifth text box on the slide
sign		JOHDANTO
		introduction

(continued)

	TIIVISTELMÄ
	abstract

Figure 17: *Use of Sign's Location to Refer to the Circular Process*

As the examples and descriptions above show, the participants utilise the signer's perspective in their TT renditions when incorporating parts of the circular process into their interpretation. Participant P06 does this as well, but their approach is more linked to the process of moving from one text box to another than to the placement of the text boxes on the slide. They use a consistent combination of classifier constructs, body lean, and location of the signs.

In the beginning, P06 produces a list buoy FIRST-OF-LIST and partially incorporates the process presented on the slide. This is followed by signing the contents of the text box, during which P06's body is slightly leaning to the right, and the incorporation of the visual ST from the signer's perspective is reinforced by locating the signs in the signing space accordingly, similarly to the example shown in Figure 17 above. This is then followed by a classifier construct that traces the path between the first and second text boxes, incorporating the circular process presented on the slide. Again, the signing of the contents of the second text box is located in the signing space according to the visual ST, and this incorporation of the slide is reinforced by the body lean to the right. These steps are repeated for the remainder of the TT rendition. Although, the direction of the body lean and location of the signs are to the left, starting from the third text box onwards, mirroring the slide's layout and contrasting the signer's perspective. Towards the end of the TT rendition, P06 produces a classifier construct representing the whole circle. The use of a classifier construct of the whole circle or its parts near the end is a shared feature among five of the participants.

An excerpt of P06's TT rendition is presented below in Figure 18. The figure first shows the production of the contents for the second text box, then the change in body lean and tracing the path between the second and third text boxes. This is followed by the production of the contents for text box three with body lean and locating the signs accordingly. The excerpt ends with tracing the path between the third and fourth text boxes.
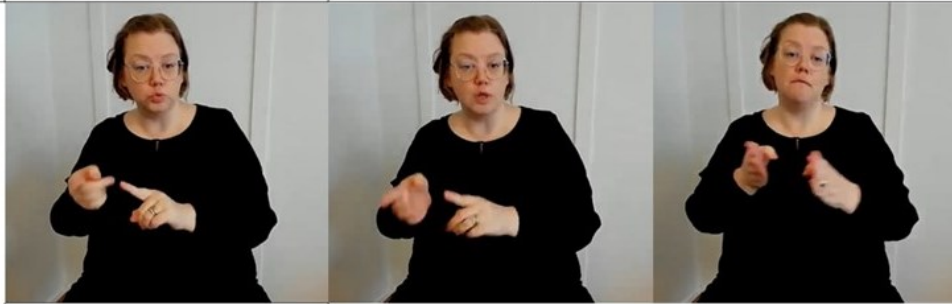
spoken ST	"...Teoreettinen viitekehys alustava, metodiluvut, (tutkimusprosessi,)..."		
translation	...Theoretical framework preliminary, method chapters, (research process,)...		
visual ST	2nd text box	the path between 2nd and 3rd box	
body	leans to right	moves from left to middle and finally to left	
sign location	on the right		
classificator		cl-process	
visual ST	3rd text box	the path between 3rd and 4th text box	
body	leans to left	leans to left	
sign location	on the left		
classificator		cl-process	

Figure 18: Use of Body Shift and Classifier Constructs to Refer to the Circular Process

5.3.3 Slide 4 in the light of task review data

In the task review data, the participants describe how they utilised or did not utilise slide 4 during their interpretation. Preparation was also mentioned, but it will be considered later in section 5.5.

Apart from one participant, the rest describe how they, at times, used slides as support to check their understanding or to look up a missing item. However, the features of the visual ST hindered this. They mention that the amount and size of text on the slide made it hard to read, and the used colours, with low contrast, affected their success in locating the necessary information.

[35] mietin valmistautuessa jo,
already while preparing I thought

[36] että tuossa on tekstit niin älyttömän pienellä,
that the texts are ridiculously small

[37] että on turha lähteä niinku ehkä rakentamaan mitenkään
so it is not worth it to build on it

[38] kauheasti *sen kuvan varaan   * sitä tulkkausta,
*too much *on the picture   * the interpretation*
              gesture representing the picture

[39] koska muuten sitten on niinku opiskelijan ihan-
because then for the student it-

[40] se on niinku *pulmallista   *
*it can be   *tricky   *
              sign PONNISTELLA (STRUGGLE)

[41] *yrittää hahmottaa tuolta mistä ei näe tekstiä että missä ollaan
to try to figure out, since you can't see the text,
---> gesture tracing the circle in the air before the participant

[42] menossa   *
*where we're at**
              ---> *

[43] niin mä en siihen kauheasti viitannut.
so I didn't refer to it a lot

[44] tai yritin olla viittaamatta,
or tried not to refer to it

[45] *enkä mä sitten itsekään aina hahmottanu   *
*and I myself wasn't always sure   **
gesture tracing the circle in the air before the participant

[46] tietty mä näin noi
of course I saw those

[47] *vähän isommalla mitä se sieltä ja sieltä itse asiassa palautti
a bit bigger ones and in fact those made me
--->gesture indicating a part of the circle

[48] mieleenkin*
*recall   *
              ---> *

[49] *joitain asioita mitä oli vähän listamaisia asioita*
*some things that were like lists   **
gesture tracing a circle, extended index finger

(E, rows 35–49)

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All participants mentioned that their own conceptualisation of a research plan differs from the circular shape presented on the slide. For most of them, the preferred conceptualisation would have been a text form presented vertically or a horizontal linear process. Below, participant F explains how they decided to work with the different conceptualisations.

[293]   että jotenkin itse siinä valmistautuessa ajattelin,
somehow during preparation I thought

[294]   että no kuuntelen vaan, että mitä hän,
that I will just listen what she,

[295]   miten hän sen asian siinä kohdalla haluaa esittää ja
how she wants to express it at that moment and

[296]   *ja sitten muuten se on niinku mulla ylhäältä alaspäin   *
*and at other times it will be from up downwards   *
both hands moving from top of the sign space to bottom

[297]   *niin kuin rakentuu,   **
* like structured   *
sign JÄRJESTYS (ORGANISATION) movement downwards

[298]   *tavallaan että se rakenne   **
*kind of that with the sign organisation   *
sign JÄRJESTYS (ORGANISATION) movement downwards

[299]   viittoman avulla
with the help of that sign

[300]   sitten pystyy tavallaan ja
that makes it kind of possible and

[301]   just *sit ne kappaleet   **
then *those paragraphs   *
*   *classifier for paragraph, repeated*
*   with downwards movement**

[302]   että tavallaan
so in a way

[303]   *siinä säilyy joku sellainen loogisuus ja joku pysyvyys**
*there remains some kind of logic and stability   *
*both hands move from top of the sign space to bottom,
repeated   *

(F, rows 293–303)

The participants described moving between different conceptualisations. They mentioned that, for example, the features and the delivery of the spoken ST affected their choice. This also is visible in the excerpt above (F, rows 293–297).

Although all participants utilised the slide when it was introduced, some of the participants decided to rely on the conceptualisation they felt to be most logical or were familiar with, as the excerpts above show. On the other hand, some either decided to

follow the one shown on the slide or were guided by it without a conscious decision, as in the excerpt below.

[285]   *tässä ihan selkeästi tämä kuvio johdatti
     *here clearly the image led me
     *---> gesture indicating the whole circle and the text boxes
[286]   niinku vaan hallitsi sitä tilan käyttöä*
     and controlled my use of space   *
                --->*
[287]   koska niinku *jos mä muuten   *
     because   *if I would otherwise*
          *palm-up gesture *
[288]   *ajattelisin opinnäytetyö tai gradua.   *
     *think about thesis   *
     *gesture indicating text moving from top to bottom *
[289]   mitä tahansa,
     of any kind
[290]   niin silloin *johdanto olisi niinku täällä *
     then   *introduction would be here *
        gesture indicating top of a text
[291]   *ja se pohdinta on täällä.   *
     *and conclusion here   *
     *NDH stays in previous gesture;
     DH moves to the bottom of a text*
[290]   *mutta nyt ne nyt kun ne   *
     *but now that they now they   *
     DH and NDH remain in the same locations
[291]   *olikin niinku*
     *were like *
     *air quotes *
[292]   *täällä   *
     *here   *
     *gesture indicating the perimeter of the circle and stopping at
     the top left part*
[293]   *niin sitten se   *
     *so then it   *
     sign KIRJOITTAA (WRITE) location top left part of circle
[294]   se oli. se oli tämän kuvion ehdoilla mentiin
     it was. I went with the conditions of this image
(G, rows 285–294)

5.4 Pointing to the slide

As mentioned in sections 2.4.2 and 2.5.4, pointing has multiple functions. It can be used to indicate a location, person, event, thing, or idea. It can produce reference in a text or be used as a tool to guide the interlocutors' attention. Pointing, as a feature of sign language, has these multiple functions and grammatical ones. In the following analysis,

however, pointing is considered solely in the cases where it is used to incorporate the visual ST into the TT renditions.

I have focused on the pointing performed with the manual articulators, i.e., hands, in cases where the intended referent is the slide or the contents of the slide. However, body and gaze are discussed when explicitly linked to the manual pointing gesture. The following section will give an overview of the pointing gestures directed towards the slide or the contents of the slide, produced by the manual articulators, and how the materiality of the remote setting affects the production of the pointing gesture.

From the 175 minutes of data from the interpreting task, I identified 34 pointing gestures directed towards the slide or the contents of the slide. The distribution and features of the pointing gestures are presented in Table 3 below. Most times, pointing is produced with a B-handshape (flat palm) and nine times a G-handshape where the forefinger is extended (n=34). 31 of the pointing gestures are performed only with the dominant hand. Participant P05 produces one pointing gesture with the non-dominant hand and two with both hands, making them the only person to opt for these options. What is noteworthy is that P02 did not use pointing gestures directed towards the slide or the contents of the slide at all during the interpreting task.

Table 3: *The Features of Pointing Gestures by Each Participant*

	number of pt			handshape		handedness			average length /ms		
	tot. number	pt-slide	pt-slide/ screen	B	G	DH	NDH	both	DH	B	G
P01	13	13		9	4	13			802	878	631
P02	0										
P03	2		2		2	2			893		893
P04	7	6	1	6	1	7			1418	1529	755
P05	3		3	3			1	2	579	579	
P06	3		3	3		3			811	811	
P07	6	4	2	4	2	6			1389	1632	903
tot.	**34**	**23**	**11**	**25**	**9**	**31**	**1**	**2**	**982**	**1086**	**796**

5.4.1 Possible prompts for pointing

Preliminary analysis of the spoken ST compared with the pointing gesture shows that an introductory phrase in the spoken ST might prompt pointing. P01 produces a pointing gesture when a slide is changed and introduced consistently for all eight slides (n=13). Also, other participants tend to point to the slide or its contents when a slide is being introduced.

Also, deictic expressions and explicit naming of the slide or its contents in the spoken ST could provide the stimuli for pointing. All of the 34 pointing gestures in the TT renditions are linked to spoken ST utterances which include a deictic reference in the form of demonstrative pronouns. 32 of these are also followed by explicit naming of the slides' contents, such as "ympyrä" (*circle*), "viimeinen vaihe" (*last phase*), and "rakennelma" (*construction/structure*). The remaining two seem to be prompted by a temporal adverb "nyt" (*now*), the use of which implies movement or transition between phases is taking place.

Spoken ST features seem also to affect the length of pointing gestures. Table 3 shows that P04 and P07 had a longer average, around 1400ms, whereas three other participants' average length of pointing gestures was between 800–900ms. The increased average length for P04 and P07 is explained by two of each of their pointing gestures being extended. Notably, P05 has the lowest average based on the use of their DH. However, if the average had been based on NDH, that would have been 2871ms, making it the longest average.

Right before the first extended pointing gesture, which was, in fact, longer than the average for a third participant as well, the slide is changed into a new one, and the produced spoken ST utterance is: "Mä oon tähän laittanut nyt tämmöinen…" (*I have here put now this kind…*). This spoken ST utterance could be described as incomplete, and it is then followed by a pause of 1776ms. The three participants start their TT renditions already as the spoken ST utterance is ongoing, and their extended pointing gestures imply that they are waiting for the spoken ST to proceed. The second extended pointing gesture for P04 and P07 can be explained by similar features later in the STs: a new slide is introduced, and the spoken ST utterance is incomplete, filled with demonstrative pronouns and little content.

5.4.2 Other modes and pointing

Pointing with either a B- or G-handshape can be accompanied by other modes as well – most prominently mouthing. In all the data, pointing with G-handshape is accompanied by mouthing four times (n=9) and a B-handshape 5 times (n=25). Mouthing was used by five participants out of six. Most times, the mouthings consisted of demonstrative pronouns "tämä" (*this*), "nämä" (*these*), "tässä" (*here*), or the beginning of them such as 'tä-'. Occasionally, the mouthing from the previous sign is spread to the pointing gesture.

Mouthing was not the only mode used with pointing gestures. Especially P01's actions show the interplay of other modes as well. Of the 13 pointing gestures: Six were accompanied by a single nod or nodding. Six times there was a shift in the orientation of the body from the centre towards the slide. One time both their head and gaze turned with the body towards the slide on the shared screen, which the participant knows to be visible on the right-hand side of the viewer's screen. Figure 19 below shows an example where P01 points to the slide, and at the same time, their body and gaze are oriented towards the slide.
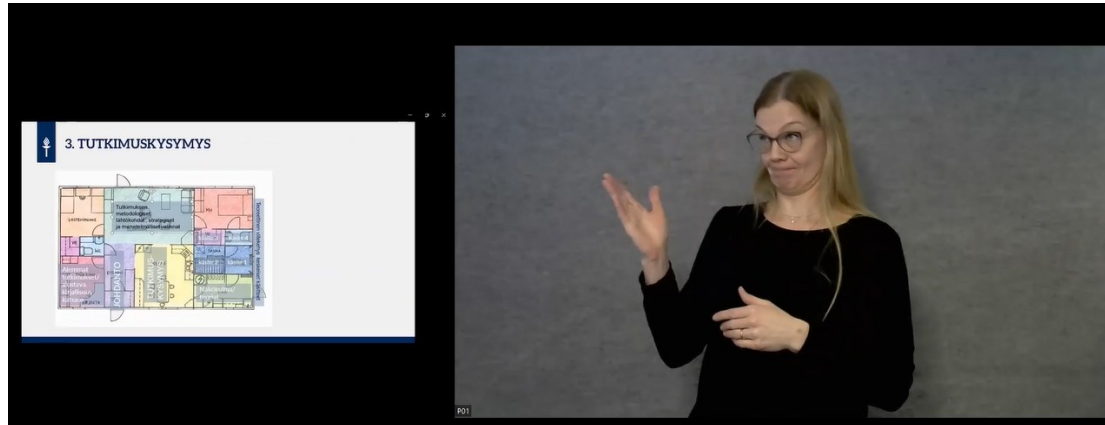
Figure 19: *Pointing to the Slide Accompanied by Gaze and Orientation of Body*

5.4.3 The effect of the remote environment on pointing

The use of manual articulators in this remote environment shows modification and reshaping of the conventionalised use of pointing. Instead of pointing towards the slide visible in the shared virtual environment, five participants produce a pointing gesture

towards the screen. There were 11 instances in the data: two cases by P03 (n=2), one by P04 (n=7), three by P05 (n=3), three by P06 (n=3), and two by P07 (n=2). Participant P02 did not produce any pointing gestures towards the slide or its contents. P01, on the other hand, very consistently directed their pointing gestures to their right, which resulted in them pointing to the slide on the spectator's screen. Below, Figure 20 shows P01 pointing to the slide, and Figure 21 shows P06 pointing towards the screen in place of the slide. The potential explanations for this practice are discussed in the following section with the help of task review data and collected background information.
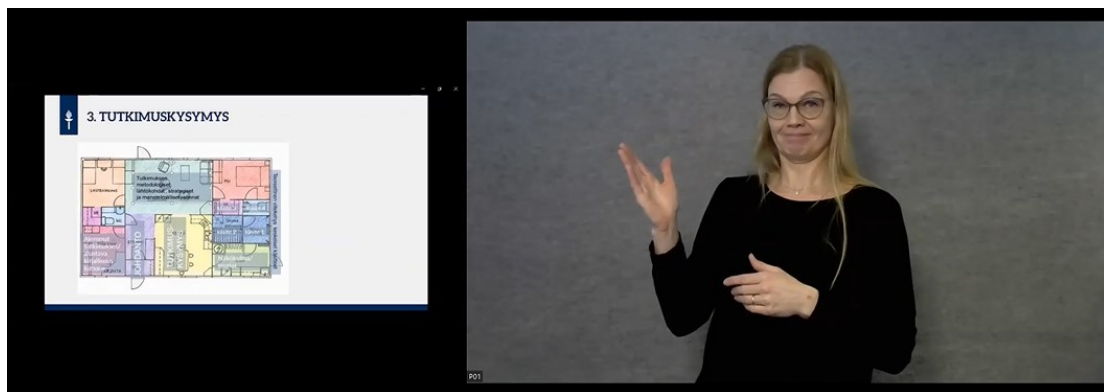
Figure 20: *Pointing to the Slide on the Side*
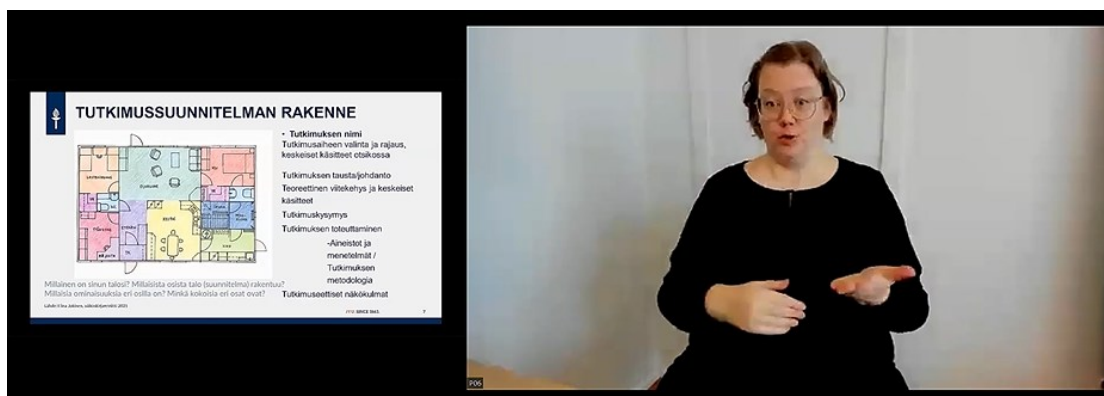
Figure 21: *Pointing to the Slide on the Screen*

5.4.4   Pointing in the light of task review data

The reshaping of the pointing gesture described above can be seen as a result of the remote environment and working practices that are not necessarily yet sedimented.

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One factor is the participants' Zoom settings. Participants B and C had 'mirror my video' activated in their settings, which resulted in a reversed image of themselves on their screen. To view oneself as others in the meeting view you, mirror my video setting should be disabled.

Even though A had the setting disabled, they commented already before starting the task that they were unsure how others saw their video. Also, E described how they find it hard to point in the right direction.

[298]   *ja tää on mulle vaikea. eet mä viittaan oikeeseen suuntaan
         *and this is hard for me to refer to the right direction
         *---> pointing to the right, towards the slide on the shared
[299]   both laugh
[300]   että se on tossa se kuva*
         that is here the picture*
         screen   --->*
[301]   *eikä tossa millä se missä se niinku   *
   *and not over there where it   *
         points to the left opposite to the slide
[302]   *mulle   * *on   *
         *for me   * *is   *
         pointing to herself *points to the right, towards the slide on
                              the shared screen*
     (E, rows 298–302)

Similarly, participant G describes that in remote interpreting, they often think about how their work will be translated onto the receiver's screen. However, their description shows that they believe the receiver's settings decide the result.

[236]   *just etätulkkauksessa mitä mä usein mietin että mä*
         *in remote interpreting I often think about that I   *
         *gesture indicating the whole circle   *
[237]   *mä kun mä viiton näin*
         *that as I sign like this *
         *sign VIITTOA (TO-SIGN)   *
[238]   *ja sitten mulla on toi kuvio tässä   *
         and then I have that image in here
         gesture indicating the whole circle
[239]   *niin näyttääkö se   *
         *so does it look   *
         DH indicates the circle, NDH sign PÄINVASTOIN (OPPOSITE)
[240]   *no se riippuu taas vastaanottajalta   *
         *but then that's up to the receiver   *
         NDH holds sign PÄINVASTOIN (OPPOSITE)
[241]   *peilaako vai eikö peilaa ja mitä tekee   *
         whether it is mirrored or not and how it is

*palm-up gesture, shrugging shoulders   *
    [242]   *että näyttääkö se just sille   *
                 *is it showing to them   *
                 SIGN PÄINVASTOIN (OPPOSITE), with NDH
    [243]   *että mä oon niinku väärässä laidassa   *
                 *as if I would be on the wrong side   *
                 NDH holds sign, DH gestures moving something to the right
    [244]   *vai onko mulla   *
                 *or am I   *
                 NDH holds sign, DH gestures moving something to the left
    [245]   *samassa synkassa sen   * *sen vastaanottajan kanssa *
                 *synced with the   * *the receiver   *
                 sign RINNAKKAIN (PARALLEL) *gesture indicating receiver*
    (G, rows 236–245)

The excerpts above show that even though the participants have been working in the Zoom platform for at least the past three years, they are not necessarily familiar with how the settings affect their view or the view of others. Nevertheless, through their practices, they show that they know how to modify conventionalised means to fit the new environment and how to compensate for their potential uncertainty.

5.5 Preliminary themes from task review data

In the task review, the participants reported their thought processes during the interpreting task. Even though only two slides were analysed in detail for the interpreting task, the task review data were analysed altogether, as themes mentioned by the participants are not necessarily linked to a single slide but can tell about more general issues. However, this section does not provide a detailed analysis of this additional data set but focuses on those themes relevant to the discussion presented in Chapter 6.

The reasons for whether or not they utilised the slides overlapped sometimes. The features of the visual and spoken STs either aided or hindered the use of slides. If the participants had trouble finding or following the logic of the visualisation, they might have opted not to rely on them in their TT rendition. Also, if the visual aid was not clear but had too much or too small text, or the colours made it hard to read the slide, these factors might affect the participants' decisions. However, if the lecturer made explicit reference to the slide or its contents, this often led the participants to incorporate the slide into their interpretation. It was not entirely unproblematic, though, especially if

the participants had not made reference to the slide previously, as is explained by participant B below.

[562]   niinku tiedätkö.
as you know
[563]   koska mä olin jo vähän niinku hylännyt tän öö
I had already kind of abandoned this umm
[564]   koko pohjapiirustuksen ja sitten tutkimuskysymys on keittiössä.
*whole floorplan and then the research question is in the
kitchen.*
(B, rows 562-564)

Another theme that was brought up in the task reviews was the participants' personal conceptualisations of the topics discussed during the lecture. Conceptualisations partly relate to the previous point of being able to follow the logic. If there were discrepancies between the participant's own conceptualisation and the one presented on the slide or in the spoken ST, the participants had to decide which one they would follow. For example, as described in section 5.3.2, we saw how most participants opted for a linear process instead of a circular one. This decision was explained, for example, by being able to move between the phases, making reference to them more efficiently, or by their previous experience.

However, their own conceptualisation might be overridden by other factors, for example, if they felt the visualisation to be "over-powering", as mentioned in the excerpt from G's task review presented above (p. 62), or if they were making the student's (assumed) needs a priority, as described by A:

[130]   yritän hyödyntää kalvoja niin paljon kuin mahdollista.
I try to make use of the slides as much as possible.
[131]   koska sitten se olisi niinku siinä valmiina
so then it would be there like ready
[132]   ja sitten just varsinkin niinku opiskelutulkkauksessa,
and especially in educational interpreting,
[133]   kun se on sitten se mihin opiskelija palaa niin
because that is then where the student goes back to
(A, rows 130–133)

The differences between participants' conceptualisations and those presented in the STs could also create an obstacle or hindrance to the interpreting process. For example, as E continues from the previous excerpt (see p. 61):

[307]   *niin   *
               *so   *
               circular movement to the screen with index finger
[308]   *että mä vielä sieltä lähtisin niinku   *
               *that I would still start to   *
               pointing to the right with a cupped hand toward the slide
[309]   *jotenkin kääntämään,   *
               *somehow rotate   *
               rotating the cupped hand toward herself
[310]   että no *eteisen mä nyt vielä pystyn.   *
               well   *hallway I still can   *
                        sign JOHDANTO (INTRODUCTION)
[311]   *ajatteleen että jos mä astun* *talosta sisään,   *
               *think that if I step   * *inside the house   *
               *shape classifier   * *sign SISÄÄN (INSIDE)*
[312]   *mutta että sitten mihin suhteeseen ne enää ne asiat siellä*
               *but then onwards how those thing are in relation there   *
               *classificator for the floorplan, horizontal   *
[313]   ei. too hard for me. ei ei toimi tuo.
               no. too hard for me. no that doesn't work.
          (E, rows 307–313)

The slides were also used as a support, however. Participants would, for example, glance at them to check if they had covered all the points. However, that was not always successful. As is shown in the excerpt from participant C below

[592]   niistä teksteistä ei hirveästi ollut apua siis siinä
               the texts weren't really helpful in
[593]   niinku tulkkaustilanteessa
               like while interpreting
[594]   mä en ehtinyt niitä katsoa.
               I didn't have time to look at them
[595]   siinä se puhuu niin kauhean nopeasti.
               as she was talking very fast
[596]   joitakin pätkiä okei,
               some parts though okay
[597]   *missä kohdassa me ollaan nyt tuossa tekstiä   *
               *in which part of the text are we now   *
               classifier for text starting at the top and moving down
[598]   *okei nyt se on tuolla alussa   *
               *okay now it is at the beginning   *
               classifier indicating the start of text
[599]   *ja nyt ollaankin jo täällä lopussa   *
               and now we are already at the end
               classifier indicating the end of text
[600]   *tai ai toi löytyykin tuolta keskeltä.   *
               *or oh that I can find from the middle   *
               classifier indicating a part of the text in the middle
[601]   *okei vielä on tulossa   *

*okay so there is still to come   *
*classifier indicating a part of the text in the middle DH,
classifier indicating the end of text NDH*
(C, rows 592–601)

When using the slides as support, the participants would glance at the contents and check items they might have missed. However, this required preparation with the slides. Some participants described that during preparation, they also noted where the potentially challenging contents were located so that they could check them quickly, as is described by participant D in rows 30–37 below.

[20]   ihan ensin kun näin tuon aiheen ja ensimmäisen dian
right at the start when I saw the topic and the first slide
[21]   niin ajattelin että tää on aika tuttua sinänsä että
I thought that this is quite familiar so
[22]   ja katoin diamäärän kymmenkunta
and I checked the number of slides, around ten
[23]   en lähtenyt kelaamaan niitä läpi niinku joskus teen että käy-
I didn't scroll them through as I sometimes do that I-
[24]   menen ensin tosi nopeasti alusta loppuun vaan
first quickly scroll through it but
[25]   nyt niin kun katsoin lähempä tekemään tätä sillä lailla.
now I decided I will start to go through it this way.
[26]   määrä vaikutti siihen ja aihe varmastikin
the number of slides affected and the topic surely
[27]   ja tota sitten tän dian kohdalla
and then with this slide
[28]   katoin tuon lähderuudun tuossa ylhäällä heti.
I checked the citation box up there right away
[29]   tietysti ensin otsikon ja sitten sen lähderuudun
of course first the heading and then the citation box
[30]   ja sen että ymmärrän mitä siinä sanotaan
and that I understand what it says there
[31]   ja katsoin että kuka on sen tekijä ja vuosiluku
and checked who is the author and the year
[32]   ja vaikka ajattelin, että mä en välttämättä näitä muista
and even though I thought that I don't necessarily remember these
[33]   niin painoin mieleen vähän sitä paikkaa,
I memorized the place
[36]   että mistä ne löydän ehkä itse jos niihin ne-
from where I could find them if they are-
[37]   jos ne mainitaan
if they are mentioned
(D, rows 27–37)

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The beginning of the excerpt above shows that preparation creates pre-understanding and provides contextual knowledge for the interpreters. Also, based on the preparation, they might make assumptions about how the topic will be discussed (see also the excerpt from C, rows 598–601).

The participants explicitly mentioned issues relating to remote setting. Issues regarding pointing were discussed in section 5.4.4. The participants, somewhat contradictory, brought up how the "easily" available visual aid encouraged them to incorporate the slide into their interpretation, and on the other hand, they did not feel the need for it, even mentioning that re-producing the visualisation would be redundant or even "too much" for the viewer. In the excerpt below, E explains how they feel the two-dimensionality of the virtual platform affects their choices.

[831]   mutta niinku silleen että yrittää välttää sellaista.
            but I kind of try to avoid that
[832]   niinku tässä ehkä se-
            like here maybe it-
[833]   se on *tää kaksiulotteisuus   *
            *it is *this two-dimensionality**
                  gesture moving away from themself towards the screen,
                    *repeated   *
[834]   ja   *sitten jotenkin se tunne siitä että ne on niinku siinä
            *and *then somehow the feeling that those are like in*
               ---> uses classifier of two flat objects being side to
[835]   samassa pinnassa kaikki mitä mun pitää nähdä*
            *the same plane everything that I need to see   *
            side   --->*
[836]   että sitte *jos ollaan niinku livenä   *
            *then   *if we are in live situation   **
               gesture indicating something being far behind them*
[837]   *niin sitten joku on vähän siellä mun taaempana*
            *then something is a bit behind me   *
            *pointing behind themself   *
[838]   *ja joku on lähempänä   *
            and something is closer*
            gesture indicating something in front of them,
            *body lean to the front   *
[839]   *ja sitten on vielä tää niinku meidän välillä oleva   *
            and then there is this between us   *
            gesture indicating space between E and the camera, repeated*
[840]   kolmiulotteisuus käytössä,
            three-dimensionality in use
[841]   niin onhan *siinä niinku   * ihan tosi paljon enemmän niitä-
            *so then   *there is   * so many more of those*

[842]   mitä niinku rohkea- rohkeasti lähtisi [käyttämään]
         that you would bravely start [to use]
(E, rows 831-842)

Remote setting also affected otherwise the target text production, as described by C
below when asked why they directed their signing towards the left.

[543]   *no tääl mun kuvassa siis täällä näkyi*
         *here in my picture I could see   *
         *gesture pointing to the left   *
[544]   *näkyi se dia ja   *
         *I could see the slide and   *
         produces classifier for slide/floorplan, vertical, on the left
[547]   *ja siellä oli se pohjapiirrustus   *
         *and there is the floorplan   *
         produces classifier for slide/floorplan, vertical, on the left
[548]   ja se   *siellä on   *
         and it *there it is   *
                 points to left
[549]   *se keskiö   *
         *the centre   *
         sign TÄRKEÄ
(C, rows 543–549)

6 DISCUSSION

This study set to find out how the interpreters utilised visual aids in an online educational interpreting setting, what kind of differences could be identified between their decisions, and how those differences might be explained. To answer these questions, I collected data from seven participants. Each of them interpreted the same ST and took part in a retrospective task review, during which they explained their thought processes and reflected on their decisions. I analysed the interpreting task data by applying multimodal (inter)action analysis and the task review using content analysis.

6.1 Utilising visual aids

The data show that the participants incorporate the visual aids by using different modes. Although there were individual differences in when they incorporated the slides, there were also similarities between the modes they decided to use and how they used them. Especially prominent was the use of body shift, classifier constructions, buoy constructions, and pointing. Pointing was then further accompanied by mouthing, shifts in gaze, and changes in body and head posture. The fact that interpreting is taking place already makes the situation one involving sequential chaining. In addition, the modes used as part of the TT renditions produce local and simultaneous chaining (see, e.g., Bagga-Gupta, 2000, 2004). The chaining creates cohesion between the visual ST and the interpretation (Johnston & Schembri, 2007; Varsio, 2009; see also, Alapuranen, 2017) by bringing features visible on the slide as a part of the interpretation. Chaining further results in juxtaposing or equating what is seen on the slide and said out loud in the spoken ST.

The documented practices show similarities to the findings by Stone and Köhring (2021). They discuss multimodal and multilingual practices of BSL in-vision interpreters when directing the viewer's attention. Although they draw a parallel between interpreters presenting on television and deaf teachers' chaining practices in a classroom, due to the absence of "communicative flow" (Gynne & Bagga-Gupta, 2013) and co-construction with the audience, they have referred to these practices as simultaneous and consecutive semiotic assemblages. While conducting this analysis, I have called similar practices as chaining. Even though also, in this study, there was no

de facto audience with whom the meanings would have been co-constructed, I see that communicative flow was taking place between the source texts and the participants.

Through the analysis of the interpreting task, we can also see how some of the participants made use of the affordances of the virtual environment by manipulating and transforming the mode of pointing into the new environment (Keating & Mirus, 2003; Keating & Sunakawa, 2011). They modified their deictic gesture and pointed towards the screen in front of them to invite the recipient to look at something visible on their screen. This shaping of the conventionalised meaning-making feature that the participants are familiar with in proximate environments (Alapuranen, 2017, 2022; Berge & Thomassen, 2016; Frasu, 2007; Minor, 2011; Stone, 2009, 2019; Stone & Köhring, 2021), shows us pointing's trajectory which might not be sedimented yet (Kusters, 2021; Tapio, 2020) but is something to take a closer look further on.

6.2 Differences and possible explanations

Especially the analysis of the retrospective task review provided some explanations for the similarities and differences: The participants made conscious and unconscious decisions about whether they would utilise the slides, sometimes during the interpreting task and at times already while preparing. When deciding to use the slides, they provided explanations, such as considering the needs of the deaf student in an educational setting and the features of the visual and spoken STs. The slides were also used as support to check that they covered each item. However, this required the participants to be familiar with the slide, its content, and layout, emphasising the importance of preparation.

Familiarizing oneself with the visual material benefits seeking support from the slide if need be and helps the interpreter create contextual knowledge, or pre-understanding, as Warnicke (2018) phrases it. Pre-understanding also helps the interpreters to be aware of what are or might be the expectations towards the interpretation. Interpreters should consider the lecture discourse's aims (Crawford Camiociottoli, 2007) and the participants' goals for the interaction and consider those when making decisions during the interpretation to help primary participants reach their goals.

Preparation specific to the situation also helps the interpreter to infer references made during the interaction, as pointed out, for example, by participant A (p. 46) during the

task review. Preparation in advance and background information might play an even more prominent role in remote interpreting, as the contextual information and contextual cues available onsite (Mondada, 2011; Streeck et al., 2011b), such as the number of participants, their relationship with one another displayed in their arrangement in the space, and the deictic gestures they use, are not necessarily available to the interpreters via the virtual platform.

The participants explained the decision of not incorporating the slides, partly on the same grounds as incorporating them: the features of the visual and spoken ST, whether they thought that the interpretation mirroring the visual aid on the screen would be easy to understand for the end user, and whether their own conceptualisation of the discussed concepts was differing from that of the STs. In these explanations, the materiality of the environment and the source text becomes evident.

Brewis (2022, p. 79) describes situations where interpreters were making fast decisions while restricted by the material environment, "often on the boundaries between intellectual processes and material aspects […] the participants encountered friction". In this setting as well, the participants were dealing with objects, i.e., slides and the virtual platform, which had a mediating role in the interpreted situation. Similarly to Brewis' (2022) findings, these affected the actions of the interpreters, made certain actions possible while preventing others, and impacted interpreting processes. These encounters with friction became visible in multiple places in the data. First, if a participant was feeling insecure about the view on the recipient's screen, it might have prevented them from, for example, pointing to the slide. Second, whether the lecturer referred to the visual aids in the spoken ST or not and how they did it affected the participants' decisions. Third, whether the processes displayed on the slides fit the participants' conceptualisations or were easy to adapt in the virtual environment. Fourth, whether the visual aids were easy to follow and read, finally, the material aspects could impact the interpreting process and the accuracy of the TT rendition.

The interpreting task data suggest that introducing a new slide and topic is a stage where participants would point to the slide, although there is individual variation. Another factor that seems to prompt the incorporation of the visual aid is the features of the spoken ST, such as deictic expressions and overt mentions of the slide and its contents.

However, the study also demonstrates individual variation and consistency. Some participants incorporated the visual aid into their interpretation throughout their TT renditions, whereas others consistently did it only at the introduction of a slide. In deciding whether to incorporate the slides or not, to what extent, and how to do that, the participants relied on their previous experiences and historical bodies (Blommaert & Huang, 2009; Scollon & Scollon, 2004). Their decisions were, at the same time, situated to and constructed in this specific context (Goodwin, 2011; Jewitt, 2014; Norris, 2004; Streeck, 2011; Streeck et al., 2011b) and affected by the STs and their delivery, the brief they received and the research setting they were participating in. The interpreting task data show and it was also explicitly mentioned in the task review data, that the participants might start with incorporating the slide. Then as the spoken ST expanded on the topic, they would change their production to fit the needs of rendering that part.

The remote environment seemed to be a prominent factor in their decisions. The participants monitored themselves and their output (cf. Keating et al., 2008; Keating & Mirus, 2003; Keating & Sunakawa, 2011; Riedl, 2022). They were 'co-residing' (Keating & Sunakawa, 2011) both in proximate and virtual space and had to control and modify their actions in both. Some of them expressed being – and also seemed to be – more confident on how their actions would be perceived by the deaf student, or in this case, the researcher, and others expressed more uncertainty in face of the 'fractured ecologies' (Luff et al., 2003) brought about the virtual platform.

When the participants are utilising the visual ST by incorporating that into their interpretation, they are integrating the virtual space and the physical space they are operating in, therefore managing these two fields. Similarly to Keating and Sunakawa (2011) describing the actions of ASL signers and participants in an online computer game, the participants in this study used multimodal resources to merge contexts and coordinate onscreen and offscreen activities. For example, as displayed in Figure 19 (p. 59) in the analysis section, P01 points and rotates their body and gaze to their right in the proximate space to draw attention to the slide visible in the virtual space. In the physical space, there is no slide. However, as they are aware of how their actions will be displayed and therefore manage their representation on the recipient's screen, they can merge these two environments.

On the other hand, in the task review, C explained how at one stage, they directed their signing to the left when referring to the slide. Even though this seemed an effective decision on their screen, as they had the 'mirror my video'-setting activated, the effect was, in fact, the opposite on the recipient's screen. As pointed out by Keating and Sunakawa (2011, p. 200), "[a] key to managing multiple separate, but at the same time contiguous, spaces with new potentials for embodied action is manipulating and understanding such multiple points of views". This understanding should also extend to the used platform's materiality and settings.

7 CONCLUSION

The findings of this study show that the participants utilise visual aid by chaining different modes to one another. They also use the slides as a support and means of preparation. The differences between participants' decisions can be explained by features of the spoken and visual STs, the interpreting process, the individual conceptualisations, and the participants' historical bodies. Their decisions were also affected by how they viewed the lecture's aims, the customer's needs, and whether they felt sure about how to work in the remote setting. Also, this being a research setting had an effect.

Data was triangulated by collecting two types of data from multiple participants, and the analysis allowed me to make evidence-based inferences; however, this study does not provide, or even aim to provide, a comprehensive inventory of the used modes. We might see some patterns and tendencies and witness how the virtual environment affects our work. However, what is witnessed and how the participants explain their decisions are situational and in flux.

The design of the study fit the research questions. Nevertheless, it had its limitations as well. As I could not guarantee the uniformity of the participants' technical setup, in most parts, I could not consider the direction of their gaze unless it shifted clearly. However, in this respect, the research setting simulated usual remote (interpreting) settings, where observing the gaze and its direction can be problematic (cf. Keating et al., 2008; Paradisi et al., 2021; Riedl, 2022).

Also, the effect of this being a research setting must be recognised. Though the ST was naturalistic, the actual data collection setting was constructed to fulfil the study's goals. During the task review, participants acknowledged that while interpreting, they were aware of the research setting in which they were taking part, and two mentioned also being aware of the probable aim of the research. Although they stated that this did not affect their interpretation, this possibility cannot be excluded entirely.

I considered this prospect before data collection and tried to mitigate the effect of the research setting with methodologically sound solutions: by providing a brief of the imagined deaf student and context information, by not revealing the exact focus before the interpreting task, and by trying to create a relaxed atmosphere during the data

collection. Nevertheless, they did not receive feedback during the interpreting task and had no chance to ask for repetition, clarification, or pause the ST. However, keeping in mind that: "the participants are only able to change their own ways: the repertoire of language use, sitting, or handwriting has to actually exist in the participants' repertoire in order for the participants to be able to act in this way" (Norris, 2019, p. 68), the witnessed practices are part of the participants' existing repertoire.

As a result of the research setting, though, the interpreters were working alone. In the Finnish context, interpreters usually work in teams of two in higher education settings. However, the length of the ST allowed for a single interpreter to work on it. Having participants work on it individually positively impacted the number of participants interpreting the same sequences and allowed for comparing their decisions. Although the aspect of teamwork in an online environment is beyond the scope of this study, it is an avenue for future research.

Additionally, the end-user perspective is a critical perspective that would warrant further research. This study documented how the interpreters incorporated the visual ST into their interpretation. However, the question remains, how those would be received by deaf students, and what would be their preferences. One of the participants made an interesting point on the reception of the TT during the task review. They mentioned feeling that if they had re-produced the slide when the actual slide was visible on the other half of the screen, it would have been "too much", as the two visual outputs would be so close to one another. This seems somewhat contradictory to previous studies, where the requirement for divided visual attention has been mentioned to be problematic. Focusing on the deaf student's experience and views and further documenting interpreters' practices and decisions could shed light on this aspect.

Based on this study, I would argue that interpreting online is not exactly the same as interpreting on-site. If comparing remote and onsite environments, the interlocutors have a better, shared understanding of the other one's perception. For example, the deaf student and the interpreters are aware of the shared space and its affordances. In remote settings, we do not necessarily know what the other person sees on their screen or where their attention is directed the same way as we would onsite (cf. Luff et al., 2003). We rely on assumptions without necessarily receiving feedback on our decisions. However, at the same time, a virtual environment can make it possible for a deaf student to have

easier access to both the visual aids, the interpreter, and maybe even the teacher and their multimodal behaviour, as everything is potentially constricted within a single screen. Nevertheless, as this study shows, the practitioners and interpreter training need to be aware of how to use and operate different platforms, of their affordances and constraints, and how the fractured ecologies we unavoidably face affect the situation.

This study contributes to documenting the practices that take place in online environments. As sign language interpreting in Finland, as well as globally, has leaped online, and the settings where remote interpreting takes place has become more varied in quick succession (De Meulder et al., 2021; Messo & Pajunen, 2021a), the documentation and description of these practices are needed. A multimodal approach allows us to consider also the material environment and its role (cf. Norris, 2004; Streeck et al., 2011a) and further helps us to consider what multimodality might mean in technologically-mediated environments and better understand how objects have their agency, which inevitably impacts our actions. Also, this kind of documentation allows us to follow how modes travel from one setting to another and are shaped by the environment.

Previous research has shown that multimodality in educational settings might pose challenges to interpreters and deaf students (e.g., Berge & Thomassen, 2016; Foster et al., 1999; Harrington, 2005). The current study adds a layer to what we know of educational interpreting and answers the growing need to look at online environments.

The leading thought in this study has been that both in online and offline environments meaning is constructed and communicated in multiple ways, and different modes or semiotic resources are used and intertwined. Even though this basic principle is shared between proximate and virtual environments, this study has shed light on the distinctive features of remote environment. As practitioners and trainers, we must be familiar with the affordances and constraints of the remote, technology-mediated environment and adapt our working practices accordingly.

To learn a practice, one must be exposed to it. To be able to evaluate the practice, it needs to be documented. To be able to discuss a practice and learn from one another, we need to have a shared understanding of what we are talking about. This study contributes to the field of interpreting studies by documenting practices taking place in

remote settings, highlighting their multimodality, and showing how technology affects our everyday work.

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APPENDICES

Appendix A – Research notification

TIEDOTE TUTKIMUKSESTA

Tutkimuksen nimi
> *Incorporation of visual information in a remote interpreting setting [työnimi]*

Rekisteripitäjä
> Marjo-Leea Alapuranen (tutkimuksen tekijä)

Pyyntö osallistua tutkimukseen
> Sinua pyydetään mukaan tutkimukseen, jossa tutkitaan multimodaalisuutta viittomakielen tulkkauksessa. Tämä tiedote kuvaa tutkimusta ja sinun osuuttasi siinä. Perehdyttyäsi tähän tiedotteeseen sinulle järjestetään mahdollisuus esittää kysymyksiä tutkimuksesta, jonka jälkeen sinulta pyydetään suostumus tutkimukseen osallistumisesta.

Vapaaehtoisuus
> Tutkimukseen osallistuminen on täysin vapaaehtoista. Kieltäytymisestä ei seuraa negatiivisia vaikutuksia.

> Voit myös keskeyttää tutkimuksen koska tahansa syytä ilmoittamatta. Mikäli keskeytät tutkimuksen, sinusta keskeyttämiseen mennessä kerättyjä tietoja ja näytteitä voidaan käyttää osana tutkimusaineistoa.

> Mikäli peruutat suostumuksen, sinusta suostumuksen peruuttamiseen mennessä kerättyjä tietoja ja näytteitä ei enää käsitellä tutkimuksessa vaan ne poistetaan välittömästi.

Tutkimuksen tarkoitus
> Tämän tutkimuksen tarkoituksena on tuottaa tietoa multimodaalisuudesta viittomakielen tulkkauksessa ja hyödyttää ammattikuntaa kasvattamalla siihen liittyvää ymmärrystä. Tutkimus ja sen tulokset mahdollistavat myös jatkotutkimusta aiheen ympäriltä.

Tutkimuksen toteuttajat
> Tutkimuksen suorittaa Marjo-Leea Alapuranen. Tutkimus on *EUMASLI (European Master in Sign Language Interpreting)* -tutkinto-ohjelman opinnäytetyö.

Tutkimusmenetelmät ja toimenpiteet
> Tutkimuksessa kerätään:

> - suostumuslomake. Lomake tuhotaan viimeistään marraskuussa 2027.

> - taustatietolomake. Lomake tuhotaan viimeistään marraskuussa 2027.

- videoaineistoa simuloidusta tulkkaustilanteesta. Tallennus tapahtuu keväällä 2023. Simuloidun tulkkauksen tallennus kestää alle tunnin. Tulkkauksen lähtöteksti litteroidaan ja tulke annotoidaan tarvittavilta osin. Tulkkaustilanteen tallenne tuhotaan viimeistään marraskuussa 2027.

- videoaineistoa haastattelutilanteesta. Haastattelun arvioitu kesto on noin tunti. Haastattelu litteroidaan, jonka jälkeen videoaineisto tuhotaan viimeistään lokakuussa 2023.

Tutkimukseen osallistuminen ei vaadi erityistä valmistautumista.

Raportoinnissa ja esittelyssä henkilötiedot pseudonymisoidaan. Aineiston käytettävyyden vuoksi, mahdollisena poikkeuksena on videokuva tai videolta kaapatut kuvat.

Suostumuslomakkeen täyttämisen yhteydessä, voit määritellä saako osia tutkimusaineistosta (mukaan lukien tulkkaustallenteesta tehdyt videoleikkeet, kuvat sekä videolta kaapatut kuvat tai niiden pohjalta tehdyt piirrokset), joissa olet mukana, julkaista opintojaksoon liittyvän raportin ja tutkimuksen esittelyn yhteydessä. Lomakkeella voit eritellä miten videoleikkeitä tai kuvia saa käyttää: 1) niin että saatat olla tunnistettavissa vai 2) niin, että sinua ei voida tunnistaa.

Tutkimuksen mahdolliset hyödyt

Tutkimuksesta ei ole suoraa hyötyä tutkittavalle. Kuitenkin, jos tutkimukseen osallistuja niin haluaa, voidaan tutkimuksen tuloksia käydä yhteisesti läpi ja niistä voi olla hyötyä osallistujan ammatillisessa kehittymisessä.

Tutkimuksesta mahdollisesti seuraavat haitat ja epämukavuudet

Oman työn tallentamisesta ja sen tietämisestä, että työtä tarkastelee toinen henkilö, voi seurata epämukavuuden tunnetta. Tutkimuksen tarkoituksena ei kuitenkaan ole arvioida ja arvottaa tulketta, vaan tarkastella multimodaalisia elementtejä tulkkeessa.

Kustannukset ja niiden korvaaminen

Tutkimukseen osallistuminen ei maksa teille mitään. Osallistumisesta ei myöskään makseta erillistä korvausta.

Tutkimustuloksista tiedottaminen

Tutkimustuloksista kirjoitetaan raportti ja ne esitellään syyskuussa 2023 opintokokonaisuuteen kuuluvassa tapaamisessa. Tutkimusta voidaan esitellä myös muissa yhteyksissä suullisesti tai kirjallisesti. Tutkimusraportti on mahdollista saada luettavaksi.

Tutkimuksen päättyminen

Myös tutkimuksen suorittaja voi keskeyttää tutkimuksen, mikäli opinnot keskeytyisivät.

Lisätiedot

Tarvittaessa voit esittää tutkimukseen liittyviä kysymyksiä tutkimuksen suorittajalle tai tutkimuksen ohjaajalle.

Yhteystiedot

Tutkimuksen suorittaja   Tutkimuksen ohjaaja

Appendix B – Consent form

Suostumus tutkimukseen osallistumisesta

Tutkimuksen nimi: *Incorporation of visual information in a remote interpreting setting [työnimi]*

Tutkimuksen toteuttaja: Marjo-Leea Alapuranen

Olen ymmärtänyt, että tutkimukseen osallistuminen on vapaaehtoista ja voin milloin tahansa syytä kertomatta keskeyttää osallistumiseni tutkimukseen tai peruuttaa antamani suostumuksen ottamalla yhteyttä tutkimuksen toteuttajaan. Keskeyttämisestä tai peruuttamisesta ei aiheudu minulle kielteisiä seuraamuksia.

Keskeyttämiseen asti minusta kerättyjä tutkimusaineistoja voidaan edelleen hyödyntää tutkimuksessa. Mikäli peruutan suostumuksen, minusta suostumuksen peruuttamiseen mennessä kerättyjä tietoja ja näytteitä ei enää käsitellä tutkimuksessa vaan ne poistetaan välittömästi.

Olen saanut tiedotteen tutkittavalle sekä tietosuojailmoituksen, ja minulla on ollut mahdollisuus esittää tutkijoille tarkentavia kysymyksiä, joten olen saanut riittävät tiedot tutkimuksesta ja henkilötietojeni käsittelystä.

Antamalla suostumukseni osallistua tähän tutkimukseen tutkittavana hyväksyn,

- että minulta kerätään tietoa tiedotteessa (liite 1) kuvattuun tutkimukseen ja
- että minulta kerättyjä henkilötietoja kerätään, käytetään ja käsitellään tietosuojailmoituksessa (liite 2) kuvatun mukaisesti.

Lisäksi, antamalla suostumukseni osallistua tähän tutkimukseen tutkittavana:

Suostun siihen, että minusta voidaan ottaa videota tutkimustarkoitusta varten.

Kyllä ☐   EI ☐

Suostun siihen, että osia tutkimusaineistosta (mukaan lukien tulkkaustallenteesta tehdyt video-leikkeet, kuvat sekä videolta kaapatut kuvat tai niiden pohjalta tehdyt piirrokset) voidaan julkaista raportin ja tutkimuksen esittelyn yhteydessä,…

1) …vaikka saatan olla tunnistettavissa.   Kyllä ☐   EI ☐

2) …mutta ne on käsitelty niin, että minua ei voi niistä tunnistaa.

Kyllä ☐   EI ☐

Suostun siihen, että minuun voidaan olla yhteydessä jatkotutkimusten osalta:
- Minuun saa ottaa yhteyttä ja pyytää osallistumaan jatkotutkimukseen tutkittavana
  Kyllä ☐   EI ☐

- Minuun saa ottaa yhteyttä ja pyytää suostumus minusta aiemmin kerätyn aineiston jatkokäyttämisestä jatkotutkimuksessa
  Kyllä ☐   EI ☐

Olen ymmärtänyt saamani tiedot, olen harkinnut edellä mainittuja kohtia ja olen päättänyt, että <u>haluan osallistua tutkimukseen tai niihin osioihin, joihin olen merkinnyt "kyllä".</u>
Kyllä ☐   EI ☐

_____,   ____   .   ___.   _____
paikka   pvm

Allekirjoitus: _____
Nimenselvennys: _____
Sähköposti: _____

Alkuperäinen allekirjoitettu tutkittavan suostumus sekä kopio tutkimustiedotteesta liitteineen jäävät tutkijan arkistoon. Tutkimustiedote liitteineen ja kopio allekirjoitetusta suostumuksesta annetaan tutkittavalle.

Yhteystiedot:

Tutkimuksen tekijä   Tutkimuksen ohjaaja

Marjo-Leea Alapuranen   Graham Turner
puh

emai

Paperista tai taltioitua suostumusta säilytetään tietoturvallisesti, kuten muutakin henkilötietoa.

Appendix C – Background information sheet

Background info on the participants and their technical set-up

Date:

Participant:

Work experience as a SLI

How long have you been working as a SLI? (years)

	1-4		5-9		10-14		15 and over

Work experience in higher education

How often do you work in higher education settings?

	few times a year		monthly		weekly		daily

How long have you worked in higher education settings? (years)

	0		1-4		5-9		10-14		15 and over

Work experience in remote settings

How often do you work in remote settings?

	few times a year		monthly		weekly		daily

How long have you worked in remote settings? (years)

	0		1		2		3		4 and over

How often do you work via Zoom?

	few times a year		monthly		weekly		daily

Technical aspects

What kind of view you used while interpreting the task?

	Speaker view		Gallery view		Hide self view		Hide non-video participants

Description of the setup:

Was the view the same during the whole task?

	Yes		No

If no, what change was made?

Is 'mirror my video' activated?

	Yes		No

Dominant hand when signing

	Right-handed		Left-handed		Ambidextrous

Preparation

How long did you use for preparation?

How did you prepare?

Was there something that caught your eye or that you paid extra attention to during the preparation?

Appendix D – Slides 3 and 4, originals

Slide 3

Slide 4

Appendix E – Task review transcription key

Transcription conventions

From the transcription of talk, e.g., stutters and filler speech has been either removed or minimized to ease reading. Short utterances like 'mmm' or 'joo' by the researcher are left out for the same reason.

Timestamps are placed every 30 seconds.

Gestures or actions are written in cursive. However, those are transcribed only when deemed relevant.

** delimit descriptions of the gestures/actions of the active speaker

*---> gesture or action described continues across subsequent lines

--->* gesture or action described continues until the same symbol is reached

*--->> gesture or action described continues until and after the excerpt's end

[overlap in speech

A-G = participant

R = researcher