



“Did he say that?”

**Perception of sign language in
Danish sign language – Danish interpretations**

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I declare that the paper embodies the results of my own work and has been composed by myself. Where appropriate within the paper I have made full acknowledgement to the work and ideas of others or have made reference to work carried out in collaboration with other persons. No other sources or tools have been used other than those cited in the bibliography.

I understand that as an examination candidate I am required to abide by the examination regulations and to conform to my university's regulations, discipline and ethical policy.

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I. Introduction

George Veditz described deaf people as “people of the eye” (Bahan, 2008) from the aspect that as a deaf person one resides in a visual world and, in a natural way, uses vision for communication as well for all other matters performed in life. When comparing deaf to hearing populations, the latter being influenced by sound in all situations, the deaf person is able to perceive an augmented amount of visual detail as well as comprehend simultaneous visual information to a greater extent (Bavelier, Dye, & Hauser, 2006; Bosworth & Dobkins, 2002a, 2002b). Enhanced performance is mostly noted under conditions of attention, which correlates well with sign language interpreting. Discrepancies in study results (Codina, Pascalis, Baseler, Levine, & Buckley, 2017; Swisher, Christie, & Miller, 1989) can be caused by differences in clinical settings, if they are not contrasted with tasks requiring central attention (Bavelier et al., 2006).

In order to comprehend the full message the visual recipient must at least perceive and understand the phonology, morphology and syntax of sign language as well as the non-manual elements, which occur more or less concurrently (Fenlon, Cormier, & Brentari, 2017, p. 63-64). Joel Snyder, who has long-time experience working with audio description for blind and visually impaired states that “Effective describers must increase their level of awareness and become active ‘see-ers’, develop their ‘visual literacy’..” (Snyder, 2005, p.195). The concept of ‘visual literacy’ could be considered transferred to the area of sign language perception in order for sign language interpreters to become aware of their range of visual literacy, and in particular, where they are less visual literate.

A. Hypothesis

Given that the sign language constituent of a sign language to spoken language interpretation contains a high amount of visual linguistic elements occurring concurrently, it is assumed that perceiving all of these elements for an L2 learner has its’ shortcomings. Restrictions in perception may derive from notions of markedness and visual acuity. Furthermore the production in Danish may be challenged in the interpreting process.

B. Research question

Are there similarities regarding which elements sign language interpreters do not perceive in a Danish sign language to Danish interpretation and which obstacles do the interpreters encounter?

II. Literature review

The field of perception of sign language seem far less researched than production of sign language, though in the later years, research within the cognitive field of perception has come to light. For instance, the international handbook on sign language consisting of more than 1000 pages (Pfau, Steinbach, & Woll, 2012) only denotes a few pages to perception and comprehension of sign language.

It is known that perception of language constituents through the visual channel is much slower than through the auditory channel (Fenlon et al., 2017), which challenges the process of decoding the message, in particular when concurrent constituents occur. According to Siple (1978) visual acuity is greater closer to the central field of vision than in the peripheral field of vision, thus perception of signs in proximity to the central part of the torso must be more accurate. In a recent study Codina, Pascalis, Baseler, Levine, & Buckley (2017) found that deaf participants reacted significantly faster to stimuli in their peripheral field of vision when compared to the hearing interpreter group and the hearing non-signer group. Thus it can be assume that location of signs has an impact on interpreters' ability to perceive them.

Of the sign articulators handshape, location or place of articulation, orientation, and movement, research indicate that movement is the most complex articulator to perceive (Woll, 2010, p. 12-13). Sign movement can possess different path directions, have local and/or internal movements, be segmented in hold-movement patterns, and so forth (Pfau et al., 2012, p. 21-45; 580-582; 657-658). The sign articulators apparently follow a pattern, where movement is recognized last, and not until this point is the sign identified (Corina, 2015, p. 943). Furthermore the notion of perceptual markedness constraints (Eccarius & Brentari, 2010) is likely also to effect the comprehension of signs. Thus certain handshapes demand less effort to perceive than others.

Visual prosody is also an important component to include, in order to understand the message of the signer. Wendy Sandler's statement "Prosody is the part of the language that determines how we say what we say." (Pfau, Steinbach, & Woll, 2012, p. 55) gives this field a vital place in interpreting, because it inflicts meaning, purpose, and the signer's objective behind the words.

It is possible to postulate that during personal communication, a person is only required to comprehend the information on a concept level for one's own understanding of the message. While when interpreting, the message needs to be conveyed coherently and with the appropriate vocabulary. Thus simultaneous interpreting can rightly be described as a

complex cognitive activity that involves a heavy cognitive load (Gile, 1999; Macnamara, Moore, & Conway, 2011, p. 121). Daniel Gile has described the process by developing an effort model for simultaneous interpretation (Gile, 2002; Pöchhacker, 2004, p. 99-100). He divides the model into three efforts; the listening and analysis effort, the memory effort, and the production effort. Attention must be allocated to all three and all are simultaneously active (Gile, 2002, p. 165), giving rise to an inevitable fluctuation in attention allocated to each of the three, throughout the interpreting process. Gile claims that each effort has a certain capacity, depending on the individual, the task at hand, etc. The capacity available for each effort must be equal to or larger than the requirements for the task, otherwise resulting in errors or omissions (p. 166). Consequently, should an interpreter afford particular attention to the perception effort while additionally having to pay particular attention to the production effort, the processing capacity may be saturated and will result in unsuccessful completion of the task.

III. Method

This qualitative study consists of three video recordings of Danish sign language to Danish interpretations carried out by three Danish sign language interpreters. The source text material consists of a video recording of a Danish deaf woman, which length is 3:24 minutes. The topic of the source text was chosen by the deaf presenter, with the instruction that it should have a status of a lecture, though not at a high level. The participants were presented with minor information on the topic in written Danish beforehand (appendix A). The preparation material was sent by email, so the participants had the opportunity to search for information on the topic. The three participants were invited to participate by their employer, and the interpretations took place at their office of employment, in a closed room. The simultaneous interpretations were recorded with a Sony handycam HDR-PJ620 camera on a tripod. Prior to initiating the interpretation, each participant filled in an informed consent form and a small-scale questionnaire to obtain information on their experience (see appendix B-G). The three Danish sign language interpreters were selected for participation on basis of their medium length of experience, which is 7-8 years. If choosing less experienced interpreters, there may be too many factors influencing their perception, such as lack of sign language vocabulary and experience with the interpreting process. Interpreters with longer experience might not be representative of the interpreting workforce. All interpreters are hearing non-native signers and all have attended the 3.5 year interpreter education program.

Having concluded the interpretation, the recording was subsequently played again for the participant, during which a retrospective interview was carried out. The retrospective interview was a semi-structured interview where obvious errors omissions were questioned. The structure of the interview was of a flexible nature, allowing for the participants to exemplify and add thoughts. The interview was video recorded and a thematic analysis was made on basis of the answers (Hale & Napier, 2013, p. 102-103). The thematic analysis was chosen, in order to identify themes or patterns from the reflections brought about by the participants. Time span of the interviews were between 45 minutes to 1.5 hours, due to variation in elaboration on the part of the participants. From this, five themes were chosen for further analysis; being blinded/eyes blinking, sign language comprehension, formulation and production in Danish, the interpreting process, and meta-linguistic awareness. See the data analysis section for description of themes. A word table was created for themes and reflections of the interpreters pertaining to the specific time code in the ELAN file (appendix I). The interpreters are referred to by participant number; # 1, 2, and 3. Some participant seem more aware of their own inabilities and challenges than others, which result in statements that refer to one theme, but may also refer to other themes. In those instances the statement have been duplicated and are presented in green font below other themes in the same row. A column containing the author's comments, have been added to the table.

To transcribe the data, ELAN (Crasborn & Sloetjes, 2008) notation system was used. In ELAN, tiers were coded for gloss, non-manuals, gestures, and mouthing. Furthermore there is a translation tier of the Danish sign language production in Danish and one in English. Each of the target text transcriptions was merged with the source text transcription to give one file containing all data. Last, two tiers were added; one for errors, misinterpretations and alike, and the other which denotes the individual themes the interpreters have reflected upon. The qualitative results of this study have come about through the indirect approach of inquiring interpreters how they think their perception and their interpreting process works. This approach introduces obvious elements of uncertainty, i.e. the lack of estimation of objective truthfulness. This should very much be taken into consideration concerning the elements of this assignment.

IV. Discussion

A. Data analysis and results

The conversations with the interpreters showed a pattern of challenges they have in common. These were categorised into five topics or themes; being blinded, sign language comprehension, production in Danish, the interpreting process, and metalinguistic awareness. Below each theme is described with the reflections and comments regarding the errors that could be extracted from the recordings of their interpretations.

Being blinded

Interpreter # 3 defined this state as “a short time when I become blind, I simply do not see the signs”, which also gave name to the category. Interpreter # 2 described it as “Blinking of the eyes because my attention shifts to fighting to find a formulation, so I don’t see what she says.” Of all the categories, this has the highest number of mentioned instances. 20 times the interpreters explain that they have not seen signs or non-manual elements. Likely more instances of being blinded occur, but the interpreters may not be aware of them. As well, some instances are mentioned by more than one interpreter.

The reasons for being blinded can mainly be related to sign assimilation or using signs rapidly, which there is examples of at the timecodes 00:24.715 and 03:11.640 in the ELAN file (appendix I), as well as the interpreting process and lack of capacity (01:06.000). The point towards the signer, which is equivalent to ‘I’ in English, that takes place 00:24.715 is only mentioned by interpreter # 3, but none of the other interpreters interpret the proper noun in Danish. Their sentence structure generalises the message, and instead of interpreting to ‘I am interested in...’, they interpret it to ‘it could be interesting to see..’ and ‘it is actually interesting to see’. The third interpreter has no interpretation of the sentence at all. All three interpreters also mention being blinded at 02:56.532, which results misinterpretations and lack of personal pronoun.

Sign language comprehension

This category mainly contains understanding sign language elements and lack of sign vocabulary (01:40.076). It is obvious that several instances of lack of sign language comprehension lead to either misinterpretations, e.g 00:16.395, 02:55.539, or a vague interpretation lacking pronouns and clear presentations of tense, amongst others. A lack of a personal pronoun can, for instance be observed at 01:56.433, 03:00.022, and 01:13.943. The latter impacts the following 40 seconds of interpretation, because the fact that the signer is

part of the story is not being transmitted. For a recipient it will be difficult to understand exactly who is doing what, and therefore the entire message becomes blurred.

The lack of sign language comprehension seem to be due to inadequate understanding of non-manual markers in coherence with pointing to a location in space as in 00:16.674. Rapid movements of signs may be another reason for lack of sign comprehension as can be noticed in 00:56.265 and 01:13.266,

Furthermore, one interpreter reflects that the sequence from 01:30.805-01:32.978 contains different signs, but that they are all produced by the signer with the same handshape, at the same location, and almost with the same movement. She describes that it makes her focus on the signer's hands, but still she senses that she does not comprehend it all.

Production in Danish

The most conspicuous reason for the interpreters having difficulty formulation themselves in spoken Danish is when no mouthing can be associated with the sign. Examples of this are exhibited in 00:17.703, 01:04.633 and 01:56.721.

The participants mention that some segments are very short in sign language but at the same time severely content loaded, and therefore more time and words are needed in Danish to convey the message. It can be observed in 00:23.452 where the signer establishes a timeline, points and place nouns there, or in 00:58.230 where WORD are placed below a picture, produced by a classifier hand. These instances often affect the perception of the next sentence (see the section on interpreting process below).

Interpreting process

The interpreting process is only specifically mentioned by interpreter # 3 during the retrospective interview. This may be because of a higher degree of metalinguistic awareness, as this participant also reflected on 4 out of the 6 instances within the category metalinguistic awareness. The interpreter express that production of a complex sentence in Danish, where she for instance is considering word choice according to register, causes her to be blinded in the moment of perception. Thus she describes Gile's effort model in practice. For instance, interpreter # 3 explains that she did not see a sequence of more than 3 seconds (02:56.504) because of increased difficulty producing the prior sentence, and the cognitive overload leads to misinterpretation of the entire sequence.

Interpreter # 3 suggests a specific option of inducing more capacity to her interpreting process. If the sentence-final boundaries and manual pauses were longer and more distinct,

she claims it would aid her in understanding that it may be a new topic, as well as giving her time to finish production of the prior sentence.

Metalinguistic awareness

This theme covers thoughts about language use, but thoughts about the content and its' use also takes place. In 00:28.501 interpreter # 3 reports that she was thinking 'it sounds interesting' and wondering 'have I interpreted this before? Maybe for an exam?' Finishing of with 'Why do they not do this in my child's kindergarten? Oh, no, she is only in nursery.' In other instances the interpreters is describing bewilderment by what the signer means, they refer to it as 'not understanding her [signer's] thought-process'. One interpreter express that she feels the signer is not structured. These meta-thoughts seem to make the interpreters frustrated. One may posit that this is not beneficial metalinguistic awareness, as it can exhaust capacity from the interpreting process. The interpreters with these reflections mention that they do not know what to do with the sentence of challenge.

B. Discussion of findings and conclusion

Particularly interpreter # 1 and 3 describe that they have difficulties understanding the signer's thought-process, in some sections. The thought-process may be somewhat equivalent to the signer's message for the audience. It may be possible to question whether the challenge derives from not understanding the goal of the signer, or due to a lack of understanding the sign language elements that the signer is producing. A plausible reason for not understanding the message could also be that the interpreter is blinded.

Awareness of which elements are important in sign language, and which are less important, thus being able to focus and give attention to the elements that carry the meaning the interpreter lacks. There seem to be a general lack of comprehension of non-manual elements and their precise degree of meaning. As non-manual elements are a natural component of sign language, it is crucial that interpreters become aware of their own abilities and inabilities within this field.

When the signer has no use of mouthing while performing a sign, a considerable responsibility to interpret the connotation of the sign is placed on the interpreter, as it depends on which associations the interpreter has regarding the constructed meaning. One example in the data occurs at the timecode 00:37.909, where the signer signs TEACH with no mouthing and a facial expression that is serious. The result is that interpreter # 1 interprets it to "it is not like you teach the children in school", interpreter # 2 omits the interpretation of this sign and

meaning, and interpreter # 3 interprets it to “force the children to write”. Thus interpreter # 1 and 3 have two different associations of the sign, and the result resembles that. The considerations to find the appropriate vocabulary in Danish take up so much capacity, that it leaves to little capacity to perceive the subsequent sentence, or distinctions of it. Furthermore it may strike one as odd that the interpreters express difficulty with interpreting sentences that contain a high amount of classifiers. An assumption could be that interpreters practice this on a daily basis, and therefore has certain vocabulary accessible. Thus the ambition ought to be expanding the Danish vocabulary, which would leave the interpreter with a larger capacity within the interpreting process.

The interpreters use a strategy of generalising the personal pronoun when not having seen the referral to first person. This takes place during long periods and leaves the recipient with an imprecise understanding of the source text. Once the interpreters understand who is referred to, they have a difficult time figuring out how to get back on track. It would be more favourable if the interpreters became aware of which elements are important in sign language, and which are of less importance. This requires a higher level of sign language skills. Furthermore, the interpreters need to enhance their ability to control attention, which is an essential skill in interpreting (Cowan, 2000, p. 129-131). In order to perceive the signs that carry significant meaning the interpreters need to shift their attention towards perceiving this. An analogy can be drawn towards the interpreter who focuses in the signer’s hands when a series of signs with similar sign articulators are produced. The interpreter may benefit from further awareness of sign language grammar as well as knowledge about attention shifting. In the specific situation shifting her attention to mouthing instead may have been a constructive decision. In the sequence, interpreter # 3 succeeded to understand and interpret the utterance, because her focus was on mouthing. However, a focal point may also be to train the interpreters’ ability to perceive signs and other visual information in their peripheral field of vision, so they are able to share attention between manual signs, non-manual elements, as well as mouthing. In this way their visual literacy skills may be increased.

Another question that arise is human rights and interpreter ethics. Are we, as interpreters, capable of passing on the correct message with the details and distinctions that have been produced in sign language? Many sign language interpreters prefer interpreting from a spoken to a signed language, hence a directionality from their A to B language (Napier, Rohan, & Slatyer, 2005, p. 186), most likely because of challenges with perception and production of a coherent target text. In Denmark deaf, hard-of-hearing, and deafblind persons have the right to require an interpreter in many areas of life, but as can be concluded

from this study, the hearing interpreter has several limitations within perception and comprehension. Hence, using a hearing interpreter does not necessarily mean that one can express one-self freely, or more accurately put, that the message is conveyed correctly. This leads to the use of deaf interpreters as vital to solve this issue. Until now deaf interpreters' area of work have mostly been described within spoken to sign language interpreting (Adam, Stone, Collins, & Metzger, 2014). In a signed to spoken language interpreting, deaf interpreters would be able to aid the hearing interpreter in several of the challenges mentioned in this paper. For instance, a deaf interpreter would be able to convey the message in a distinct and less rapid sign language with clear boundaries for the hearing interpreter to perceive. The deaf interpreter would be able to hold information in order to for the hearing interpreter to finish the production in the spoken language, and when needed produce signs with a Danish syntax and mouthing. In cases where the source text is idiomatic or without mouthing it would be particularly favourable. It is possible to assume that this cooperation would give the hearing interpreter greater capacity for the interpreting process and, as a result of this, less blinded areas.

V. Further research

This study is small-scale and therefore very limited. Not all interpreters have shown equal ability to describing what takes place during their interpreting process and some seem more honest about their own inabilities than others, so for future studies the sample size should be enlarged. A varied level of experience in the participating interpreting in a future study is suggested, as well as involving codas and deaf interpreters.

Along with this, a study could include eye tracking of the participants in order to detect where their attention capacity is allocated.

Furthermore, a study that seeks to train and raise awareness within a group of interpreters regarding the described challenges, and hereafter measure possible improvements, would be interesting and might have pervasive results for interpreter training. Training may involve cognitive and perceptual practice.

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