STUDIES IN SWEDISH SIGN LANGUAGE

Reference, Real Space Blending, and Interpretation

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Studies in Swedish Sign Language

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Till Jens – jag hoppas du hittar *din* väg i livet.

Abstract

This thesis comprises four separate studies of the same material: a ten-minute Swedish Sign Language monologue. *Study I* describes the form, meaning, and use of the sign INDEX-c, a pointing toward the chest traditionally described as a first person pronoun. It is argued that INDEX-c is used not only with specific reference to the signer or a quoted signer, but also with non-specific reference. Contrary to what has been reported, INDEX-c is used not only for constructed dialogue, but also in constructed action. The analysis reveals two separate forms, as well, labeled as reduced INDEX-c and distinct INDEX-c, respectively. *Study II* describes the activities of the non-dominant hand when it is not part of a two-handed sign. A continuum is suggested, moving from different rest positions that do not contribute to the discourse content, via mirroring of the dominant hand, for example, to instances where the non-dominant hand produces signs of its own while the dominant hand remains inactive, i.e. dominance reversal. Several of the activities of the non-dominant hand, including the four types of buoys that are described, help structure the discourse by indicating the current topic. *Study III* uses Mental Space Theory and Conceptual Blending Theory to describe the use of signing space for reference. A correlation is shown between discourse content and the area in the signing space toward which signs are meaningfully directed, and also between these directions and which types of Real Space blends the signer mainly uses: token blends or surrogate blends. Finally *Study IV* looks in more detail at three segments of the discourse and their Real Space blend structure. An initial analysis of eight interpretations into spoken Swedish is also conducted, focusing on whether preselected content units (discourse entities and relations) are identified. A large number of Real Space blends and blended entities are argued to result in less successful renditions measured in terms of preselected content units.

Keywords: Swedish Sign Language, INDEX-c, first person pronoun, non-dominant hand, buoys, Real Space blending, token blend, surrogate blend, signing space, constructed dialogue, constructed action, sign language interpreting.

Acknowledgements

This thesis is the result of a long process, indeed, beginning in an academic sense in 1993, with a wish to write a thesis about signed language interpreting. I had absolutely *no* idea what writing a thesis meant, or how to go about it. At the time, hearing students were not accepted into the courses leading to the PhD program in (Swedish) Sign Language, so I am greatly indebted to Kenneth Hyltenstam for accepting me as a PhD student at the Centre for Research on Bilingualism at Stockholm University instead. He believed in a totally naïve signed language interpreter who wanted to continue studying after finishing her BA as an English major but didn't really know what such studies would entail. The courses and discussions at the Centre provided me with a sound basis in bilingualism and also introduced me to critical reading of research publications.

My supervisor was Birgitta Englund Dimitrova, whose research interests were interpreting and translation studies – subjects I had hardly heard of at the time. She inspired me to attend the Aarhus Seminar on Interpreting Research in January 1997. This proved to be a fantastic opportunity to meet and converse with some of the top researchers in the field, as well as fellow research students.

My first study never became a study of interpreting, however, and I soon realized I would need to learn much more about Swedish Sign Language to be able to finish the work. Fortunately, by then the courses leading to the PhD program were open to all students who were fluent signers, and the present thesis owes much to those courses and to discussions with the other students. In 1998, I switched to the PhD program in Sign Language. For several years, the "group" of PhD students consisted of Pia Simper-Allen and me, and our discussions have been invaluable to me.

Looking at the process in a more personal sense, it all started in 1980, when I attended the interpreters' training program at *Västanviks folkhögskola* – not because I really wanted to be an interpreter, but because it was the only place where I could learn more Swedish Sign Language. Despite having other plans, I moved to Stockholm in 1981 and became a full time interpreter. In 1986, Inger Ahlgren (RIP) and Brita Bergman asked me to come work at Stockholm University, a truly defining moment both in my professional and personal life. Through all the years since, the Department of Linguistics, and especially the Sign Language Section, has been an exceptional place to work in; a constant source of inspiration, knowledge, challenges, and discus-

sions. To interpret at the department and at various conferences has been part of my own learning process, both in sign linguistics and otherwise. I am deeply indebted to all the people I have worked with during my time at the department – nobody mentioned and nobody forgotten. Special thanks are, however, due to Lena Johansmide for allowing me to scrutinize every aspect of her signing and to Thomas Björkstrand and Lars Wallin for generously providing me with technical assistance as well as native insights on Swedish Sign Language whenever these were needed.

After several years at the department, I became involved in testing interpreters for acceptance into our diploma program for Swedish Sign Language interpreters, as well as teaching in that program. In my thesis, I use authentic recordings of part of the test the interpreters had to take to be allowed into the program. I am deeply grateful to the eight colleagues whose recordings I have analyzed. They agreed to let me use their video recorded interpretations, even though several of them were not particularly pleased with the interpretations they had produced.

In all of my professional roles I have been fortunate in being part of a new, exciting, and growing field. Many of the interpreters, linguists, and interpreting researchers I have met have been an inspiration to me. I have also been fortunate in meeting numerous fantastic deaf people who have willingly shared their language with me. Work and pleasure has had a tendency to merge, but not everything has been work, and several friendships have grown out of working relationships. Without forgetting any of you all, I would like to make a special mention of Lorraine Leeson, a kindred soul in being *both* a signed language interpreter and a linguist at heart. We first met at the Aarhus seminar, and our roads have continued to cross ever since in a very special mix of work and pleasure. A particular note of thank you also goes to the Norwegian Sign Language group in Trondheim for letting me try out new ideas and providing a friendly atmosphere for discussions.

Study IV and the summarizing part of this compilation thesis have benefited from proofreading by Lamont Antieau. When compiling the manuscript, I also received useful help from Margaretha Fathli at the Stockholm University Library. She helped me to avoid panic when dealing with all the intricacies of what to do, and what *not* to do, with previously published texts and taught me how to communicate with publishers.

There is no way I can even begin to express what Brita Bergman has meant to me during these years. She believed in me, first as an interpreter, then as a teacher, and finally as a PhD student. She has served as an inspiration, a role model, a friend, and a mentor, as well as my supervisor.

Finally, I want to thank my family and friends outside of the world of signed language and linguistics, who have helped me find a balance in life. Most of all, of course, my thoughts go to Jens – you are now moving on to create your own life and make your own choices, and I hope they will be as fulfilling as mine have been.

Foreword

The original aim for my PhD was to study interpreting between Swedish Sign Language and spoken Swedish. I was interested in possible reasons that key parts of a message like "Who does what, to whom, and when?" are quite frequently rendered incorrectly by signed language interpreters. Studying part time, the plan was to start with something that was simple, easy to delimit, and thus a realistic first study. After some deliberation, I was convinced I had found the perfect topic. What could be simpler than identifying every instance of INDEX-c, in which the signer touches her chest with the tip of her index finger, decide who the proper discourse referent of this sign was, and then determine whether the sign was correctly interpreted in the eight different interpreted renditions or not? This was also in line with signed language interpreting research at the time, which to a certain extent focused on right or wrong, and the counting of mistakes, or *miscues* in Cokely's (1992) terminology.

Early during the analysis, however, it became clear that the signer was using the pointing sign INDEX-c in a way that was not in accordance with what I had been taught regarding when and how to use it. The first study, therefore, never became a study of interpreting but developed into a study of how the pronominal pointing sign INDEX-c is actually used in a signed discourse. It became clear that in order to carry out this first study I would need to know much more about Swedish Sign Language, and I switched from the PhD program in Bilingualism to the program in (Swedish) Sign Language.

In 2003, Scott Liddell published his seminal book *Grammar, Gesture, and Meaning in American Sign Language*. Reading it as part of my required course work and thereby coming across concepts like *Real Space blending*, *tokens*, *surrogates*, and *buoys* helped shape my understanding of signed language. Liddell's comprehensive, descriptive model for the use of space in American Sign Language that he presented in the book served as an inspiration for the rest of my work.

Study II began as an analysis of how the signer uses the buoys described by Liddell (2003) but branched out to describe all the activities of the non-dominant hand in the signed discourse of Study I.[1] Studying the activities of the non-dominant hand did not mean straying very far from the original aim

[1] The signed discourse analyzed for all four studies is described in the section entitled Introduction, which appears below.

of the thesis, which was to study interpreting. Much of the activities of the non-dominant hand play a crucial part in indicating the current topic of the discourse, and understanding this is critical for interpreters.

While finishing Study II, I came across *Perspective Shift Reflected in the Signer's Use of Space* by Terry Janzen (2005). In addition, I was reading *Cognitive Grammar* (Taylor, 2002) and *Spatial Paths Representing Time: A Cognitive Analysis of Temporal Expressions in Norwegian Sign Language* (Selvik, 2006). This literature helped shaping Study III, which entailed a continued analysis of the same signed discourse, now describing the signer's use of signing space and different kinds of Real Space blends.

Despite my intention to write about signed language interpreting, and though the description of the use of signing space in Study III also contains critical knowledge for interpreters, I had still not written more than a few cursory remarks regarding interpreting. In Study IV, however, interpreting was finally a part of the analysis. In this study, eight interpretations of the same signed discourse into spoken Swedish are also analyzed and discussed. They are presented in tables, where I have simply marked whether the interpreters have rendered two kinds of content units – discourse entities and relations – correctly or not. This fairly straightforward process of deciding whether something has been rendered correctly or not can be seen as a return to the original idea of Study I and to the question of right or wrong, leaving me back where I started.

List of studies

I. Nilsson, Anna-Lena. 2004. “Form and discourse function of the pointing toward the chest in Swedish Sign Language.” *Sign Language & Linguistics 7:1*. 3–30.
II. Nilsson, Anna-Lena. 2007. “The non-dominant hand in a Swedish Sign Language discourse.” In Myriam Vermeerbergen, Lorraine Leeson, and Onno Crasborn (eds.), *Simultaneity in Signed Languages: Form and Function.* Amsterdam/Philadelphia: John Benjamins Publishing Company. 163–185.
III. Nilsson, Anna-Lena. 2008. *Spatial Strategies in Descriptive Discourse: Use of Signing Space in Swedish Sign Language.* CDS/CLCS Monograph Number 2, Series Editor: Lorraine Leeson. Drumcondra, Ireland: Centre for Deaf Studies, University of Dublin Trinity College. 79 pp.
IV. Nilsson, Anna-Lena. (this volume) “Real Space blends in Swedish Sign Language as an indicator of discourse complexity in relation to interpreting.” 85 pp.

Contents

Introduction

The Swedish Sign Language discourse used for these studies consists of nearly ten minutes of monologue, where the signer retells the contents of an autobiography she has read. The title of the book is *Livets hjul: En självbiografi i dödens närhet*, and it was written by Elisabeth Kübler Ross.[2] As the name of the author and main character of the book is quite long, I use the abbreviation EKR to refer to her, and the discourse will consequently at times be referred to as *the EKR discourse*. The signer is retelling the contents of the book freely, without any written notes. During the recording session, a native signer who had not read the book was sitting next to the camera as the addressee.

The EKR discourse was recorded and used during the Fall 1998 as part of an admittance test for a diploma program for Swedish Sign Language interpreters at Stockholm University. The program was open to professional interpreters who already had a certain level of competence in interpreting. The level of their skills was tested during a session containing four mock interpreting assignments of approximately ten minutes each. The four discourses used were all monologues, and the EKR discourse was used as the source language for one of the assignments, in which the interpreters' skills in working from Swedish Sign Language into spoken Swedish was tested.

These mock interpreting assignments were captured on video for later analysis and classroom discussion. The video camera was directed at the television monitor, so that the resulting recordings consist of the interpreters' spoken renditions into Swedish as well as a recording of what the interpreter was seeing. The eight recorded interpretations analyzed in Study IV are those produced by the eight interpreters who were offered a place in the course.

The sign language discourse has been transcribed using ELAN (EUDICO Linguistic Annotator).[3] The interpretations were also transcribed using ELAN. In order to make the transcription process more manageable, the source text was divided into smaller parts called *chunks*. All of the transcriptions were made in Swedish, and selected parts have subsequently been translated into English by me. All four studies that make up this compilation

[2] The title of the English original is *Wheel of life.*

[3] This annotation software can be downloaded at http://www.lat-mpi.eu/tools/elan/ free of charge.

thesis have different aims, and the first three were published in three separate publications with their own style guidelines. Therefore, the transcriptions look slightly different in the four studies. In Study III, a large number of photos were used, as well, to clearly illustrate the signer's use of space.

As a consequence of the lengthy process behind the development and completion of this thesis, the gloss chosen to represent a specific sign can differ between the studies. Sometimes, this is a consequence of the aim of the specific study, but it may also be an attempt to find a better gloss for a specific sign.

The analyses carried out for Study I, II, and III have shown that several discourse strategies previously regarded as typical of narratives are used in the EKR discourse as well. To avoid creating erroneous associations with narrative discourse, the label *signer's perspective* was chosen for Study IV, rather than *narrator's perspective*, which was used in Study III. An additional difference between the studies is that in Study I the concept *receiver* is used, whereas in Study II, III and IV the concept *addressee* is used instead. Work with the Real Space blend tables for Study IV also resulted in exchanging *story character perspective*, which was used in Study III, for *discourse character's perspective*.

In the following, each of the four studies will be summarized, in chronological order according to when they were published.

Study I: Form and discourse function of the pointing toward the chest in Swedish Sign Language

The sign that was described as a "pointing toward the chest" in the title of the study was glossed INDEX-c. In citation form, INDEX-c is produced with the tip of the index finger in contact with the signer's chest (*Svenskt teckenspråkslexikon*, 1997). This pointing sign has previously been referred to as the *1st person singular* pronoun in Swedish Sign Language (Bergman, 1981). More recently it has been described as a pronoun meaning 'the signer' ('the speaker') (Bergman, 2002, my translation). In the EKR discourse, however, INDEX-c refers to the signer herself only once. The other fourteen instances analyzed in the study are used anaphorically and do not refer to the signer. The signer's use of INDEX-c in the EKR discourse indicates that it can also function as an indefinite pronoun.[4]

It has been claimed for Swedish Sign Language that when INDEX-c does not refer to the signer it can be used for non-first person reference, but only

[4] As pointed out to me by Elisabeth Engberg-Pedersen at the time of publication (personal communication), this could then be a case of a sign extending its use to related contexts, from deictic reference to anaphoric reference to nominals with specific and non-specific reference.

in reported speech (Wallin, 1987; Ahlgren, 1991; Simper-Allen, 1999). In the EKR discourse, however, the fourteen instances of INDEX-c that do not refer to the signer are not confined only to reported speech, or *constructed dialogue* (Tannen, 1986); rather, the thoughts as well as the actions of somebody else are also reported with the use of INDEX-c. It is also clear from how INDEX-c is used that a pointing toward the signer can be used to refer to somebody other than the signer, with both specific and non-specific reference. Similar use of the sign PRO.1 in American Sign Language has been described as *constructed action* (Winston, 1991; Metzger, 1995).[5]

It is also shown that there are actually two different forms of INDEX-c, labeled *distinct INDEX-c* (dist-INDEX-c) and *reduced INDEX-c* (red-INDEX-c). Dist-INDEX-c is produced with the tip of the index finger in contact with the signer's chest, i.e. there is no assimilation of the handshape. Dist-INDEX-c tends to have a longer duration than the reduced variant, and the signer looks at the addressee. Red-INDEX-c is characterized by a brief, brushing movement, and by assimilation of the handshape to the previous and/or following sign. While producing red-INDEX-c, the signer's gaze is directed away from the addressee.

Regardless of which variant is used, INDEX-c is not used to change referent. It is used to show a change of perspective or to continue from an already changed perspective. The only systematic difference in how the two forms of INDEX-c are used seems to be related to the storyline. Whereas dist-INDEX-c is used when the storyline continues, red-INDEX-c is used for narrative repetition. Possibly, when the reduced form is used for repetition, which in a sense can be regarded as a kind of redundancy, this constitutes a special "redundancy version" of the sign.

Comments regarding Study I

Working with the same material for a long time and viewing it numerous times naturally opens up the possibility of eventually finding things in it you did not realize were there when you started. Whereas Study I describes 15 instances of INDEX-c, the number of instances of INDEX-c in the final transcription totals 16. The instance not described in Study I is an unclear one marked with a *?* in the full transcription of the three analyzed segments of the EKR discourse in Study IV (Nilsson, this volume, App. 2). Such possible instances of INDEX-c are so brief that it is hard to tell whether they are actually there or not, and this one was not noticed in the beginning of the analysis.

Dist-INDEX-c and red-INDEX-c are described as variants of the sign INDEX-c. It is not possible to determine whether this is truly the case or if they

[5] Most of the work on Study I was concluded before I read Liddell (2003), and therefore the concept *surrogate* is not used in this study.

are actually two different lexical items from this study alone. In the EKR discourse, all three instances of INDEX-c that refer to the main character of the book, i.e. the instances with specific reference, are red-INDEX-c. In Study I, the fact that *both* variants of INDEX-c can be used for non-specific reference is in focus. A study of which variant can be used for specific reference would also be needed to tell us more about how the sign is used. Further studies would also be necessary to establish whether the use of INDEX-c, and its variants, differs between different kinds of discourse and between individual signers.

Another unresolved matter in Study I pertains to logophoricity and whether Swedish Sign Language might have a logophoric pronoun (Nilsson, 2004:25–27).[6] The possibility that the narrative repetition of verbs, as discussed in the study, may actually be considered logophoric use is also raised in Study I. In Study III and IV the concept *surrogate blend* is used when describing these constructions.

To broaden our knowledge of how INDEX-c is used in Swedish Sign Language other signers as well as different types of discourse will need to be analyzed. As the use shown in Study I differs from earlier descriptions of the use of INDEX-c, broadening our knowledge would potentially also benefit the training of interpreters working to/from Swedish Sign Language.

Study II: The non-dominant hand in a Swedish Sign Language discourse

In Study II the activities of the non-dominant hand, when it does *not* participate in the production of a two-handed sign, are described for the whole EKR discourse.

Counting the signs in the discourse, and categorizing them according to whether they have a one-handed or two-handed citation form, yielded a distribution that is roughly fifty-fifty: 47% (*n*=538) signs are two-handed, and 53% (*n*=613) are one-handed. However, if we include all of the activities of the non-dominant hand when it is not part of a two-handed sign, the impression we get is quite different. Then, a total of approximately 90% (*n*=1,038) of the 1,151 instances of signs in the discourse are produced in a way that gives an impression of two hands acting simultaneously.

[6] When Study I was published, Östen Dahl made me aware that quite a few languages in the world do not use special constructions for *style indirect libre*, or at least use the same pronomina as in *direct speech*. This means that they use the first person pronoun logophorically. Swedish Sign Language could also be such a language, but it is not possible to draw that conclusion yet.

The activities of the non-dominant hand are described as existing on a continuum. At one end we find non-activity, and no contribution to the discourse content, and at the other end we have instances where the non-dominant hand produces signs of its own, while the dominant hand is not producing any sign(s).[7] Complete non-activity of the non-dominant hand, *in lap*, is a position where the non-dominant hand is resting in the signer's lap, not contributing at all to the discourse content. There are two more rest positions: *at chest* and *mirror at chest*, respectively. After these three rest positions come activities where the non-dominant hand moves. First we find instances where it mirrors the actions of the dominant hand, which in turn is producing one-handed signs: *mirroring* and *doubling*. Next, in order to produce a *sign fragment*, the non-dominant hand remains in place after having been part of the production of a two-handed sign and is held in position while the dominant hand produces signs. We then come to instances on the continuum where the non-dominant hand independently produces signs. In the study, several kinds of *buoys* (Liddell, 2003) are described: the *POINTER buoy*, the *THEME buoy*, *list buoys*, and *point buoys* (*POINT-G* and *POINT-B*) (Vogt-Svendsen & Bergman, 2007). Finally, in *dominance reversals*, a one-handed sign is produced with the non-dominant hand, without any sign simultaneously being produced by the dominant hand.

Several of the activities of the non-dominant hand that are described as part of this continuum help indicate to the addressee who/what the current topic of the discourse is. Dominance reversal seems to be part of how the signer organizes the discourse. Five of the eight instances of dominance reversal occur at the end of a signed sequence and are followed by both hands assuming a two-handed rest position.

Comments regarding Study II

Several different terms have been used to distinguish the signer's two hands and their roles in signing, and it was therefore necessary to decide which terms to use in Study II. In order to save space no discussion regarding the choice of terms was included in Nilsson (2007). Battison (1974) describes phonological deletion in American Sign Language and uses several different terms; *dominant hand* and *non-dominant hand*, *active hand* and *stationary hand*, as well as *subordinate hand*. Padden & Perlmutter (1987), describing the phonology of single signs in American Sign Language, use the terms *strong hand* and *weak hand*. According to them the hand

[7] Photos illustrating each position and activity mentioned here are found in Study II in this volume. The edited volume where Study II was originally published contains a CD with an mpeg-file and ELAN-annotations of the examples in Figures 5, 6, 7, 9, 10, and 11.

> "sometimes called the 'dominant' hand in the literature, we call the 'strong hand'; the other we call 'weak'. Except under discourse conditions not relevant here, one-handed signs are made with the strong hand." (1987:338)

Their terminology has been used by many others, e.g. Liddell (2003). Engberg-Pedersen (1993:35–36), in her description of Danish Sign Language, states that most human beings are either *right-dominant* or *left-dominant* and that signing can be *right-dominant* or *left-dominant*. Having listed form criteria for signs, she also declares that there is a need to distinguish between the *active hand* and the *passive hand* "or the *strong* and the *weak* hand (Padden & Perlmutter 1987)" (1993:36). As the discussion in Padden & Perlmutter is very different from that in Study II, I decided not to use their terminology. To use the terms *active* and *passive* did not seem appropriate either, considering the fact that I was describing the activities of the hand that would be the *passive hand* in that terminology. I therefore decided to use the terms *dominant hand* and *non-dominant hand* instead.

Of the activities described in Study II, *dominance reversal* is especially far from being satisfactorily described and would need to be analyzed in more detail in order for us to understand how it is used. As for the rest position *in lap*, its existence in the discourse is at least in part a consequence of the signer sitting down, and an analysis of the signed language produced by a signer who is standing up would probably give different results.

In order to see whether this signer's use of the non-dominant hand is typical for how it is used in Swedish Sign Language, other types of discourse would have to be analyzed, looking e.g. at monologues as well as dialogues, different styles and registers, and signers of different ages. It would also be interesting to compare native signers with beginning signers to see if there is a difference in how the non-dominant hand is used. Finally, and of particular relevance to this thesis, a comparison could also be made between how native signers use the non-dominant hand in their signing and how it is used by interpreters working into Swedish Sign Language.

Study III: Spatial strategies in descriptive discourse: Use of signing space in Swedish Sign Language

Study III contains a more detailed introduction to the theoretical framework used for both Study III and IV, including some of the basic concepts of *Mental Space Theory* and *Conceptual Blending Theory*. An overview of some previous analyses of the use of signing space for reference is also presented, looking e.g. at pronouns, *frame of reference*, *point of view*, and *role shift*. *Role shift* is also known as *role play* or *body shift*, whereas in Study III the concept *surrogate blend* is used to describe this.

The analysis for Study III reveals a correlation between discourse content and the area in signing space toward which signs are meaningfully directed, and also between these directions and which types of Real Space blends the signer mainly uses; token blends or surrogate blends.

The area to the signer's left is used for meaningfully directed signs in two of the four main parts of the EKR discourse, where the signer provides background and orienting material about the author and main character of a book she has read: Elisabeth Kübler Ross. In these two parts of the discourse, use of token blends is the rule, broken only by a few very brief sequences with surrogate blends.

In the other two main parts of the EKR discourse, where the signer renders the life of the main character as described in the book, the area in front of the signer is used for meaningfully directed signs. Here, the actions and doings of the main character, as well as other referents, are presented from both *narrator's perspective* and *story character's perspective*, and the signer constantly switches between using token blends and surrogate blends.

Some of the discourse characters are mentioned both when the signer uses the area to her left *and* when she uses the area in front of her for meaningfully directed signs. These discourse characters are thus associated with more than one area in signing space.

The signer also gradually zooms in on a referent, starting for example with a whole 'audience', then talking about 'many in the audience', and finally about 'many doctors in the audience'. She switches between using token blends or non-blended sequences to introduce the next referent and using surrogate blends to show what somebody is doing. The signer introduces the next referent by producing a noun phrase that reduces the scope of the reference, while directing her gaze at the addressee.

Instead of describing, e.g., a person's attitudes and opinions from narrator's perspective and using only token blends, the signer chooses to present not only interaction, but also the attitudes and opinions of people, using surrogate blends. In such surrogate blends, the signer blends with and becomes a visible instance of a discourse character. Sometimes this entails the signer becoming a blended instance of a single non-specific person, who represents a whole group of people. The signer's gaze direction indicates which invisible surrogate she (as a visible blended surrogate) is interacting with.

When a token blend contains more than one token, these are frequently *stacked*, i.e. placed above each other, within the same area in signing space, rather than placed on opposite sides of the signer. Only when there is a distinct contrast made, a new token is placed on the opposite side of the signer's body, and thus opposite the already existing one(s). As many as three tokens can be stacked within the same area, without this generally creating any problem associating meaningfully directed signs with the intended blended entity. These stacked tokens initially gave a very distinct impression of being separated by an actual height difference. A detailed analysis, however, mea-

suring the location in signing space of pointing signs directed at tokens, indicated that matters are not quite that simple. Possibly, the perceived difference should be regarded as a "virtual" height difference, created through the signer's use of gaze direction and verbs produced in surrogate space, rather than an actual physical height difference.

Comments regarding Study III

In the discussion in Study III, it is shown that the signer presents not only interaction but also the attitudes and opinions of people using surrogate blends. The terminology *constructed dialogue*, *constructed action* and *constructed thought* is also suggested. However, as discussed in Study IV, it is not really possible to tell whether a construction like this should be analyzed as constructed thought, that is, what the person in the audience would be thinking, or constructed dialogue, that is, what the person in the audience would actually be signing to herself (and which anybody would be able to see). Therefore, the suggested third category *constructed thought* would be difficult to identify, and it is probably wiser to return to using only two terms, and regard surrogate blends as frequently used for representing either *constructed dialogue* (Tannen, 1986) or *constructed action* (Winston, 1991; Metzger, 1995). Constructed dialogue will then subsume both what somebody said, in terms of monologue as well as dialogue, and what somebody was thinking. As is mentioned in Study IV, Liddell & Metzger (1998:668-670) discuss a similar phenomenon in ASL, deciding to treat both as constructed dialogue (following Tannen, 1986; 1989).

Analyzing the EKR discourse makes it clear that the addressee, as well as the signer, must keep track of a large number of referents in order to be able to construct appropriate Real Space blends. Matters are actually even more complex than they seem in Study III, since the blended entity |dying person| is used as a kind of umbrella term in the study. Throughout the discourse different kinds of dying persons that the main character of the book works with are mentioned, and the blended entity |dying person| is thus associated with, e.g., 'cancer patients', 'children dying from cancer', 'AIDS patients', and 'children who have AIDS'.

In order to see which parts of the above described results are typical of this signer, or a consequence of the discourse type, recordings of several other signers producing other types of discourse will have to be analyzed. It would also be of interest to analyze the use of signing space in different types of interpreted discourse.

Study IV: Real Space blends in Swedish Sign Language as an indicator of discourse complexity in relation to interpreting

In this explorative study, an attempt is made to identify reasons that some parts of a signed Swedish Sign Language discourse seem to pose more of a challenge for signed language interpreters, who simultaneously render them into spoken Swedish, than other parts of the same discourse. The *Real Space blend* (Liddell, 2003), or RSB, structure of selected segments of the discourse is analyzed, and an initial attempt is made to see if complex RSB structure can account for some of the challenges the interpreters face. The factors discussed as possibly making a segment more complex are the following: which perspective the signer uses and switching between such perspectives; the identity, type and location of blended entities; the number of blended entities; whether the entities are explicitly introduced and reintroduced or not; and which expressions (if any) are used about them. Real Space blend tables are introduced in an attempt to make these factors more easily perceptible.

The three segments analyzed for the study are of almost equal length, approximately 40 seconds, but turn out to differ radically when it comes to the number of Real Space blends and blended entities they contain. The least complex segment, Segment 1, contains three RSBs and three blended entities, one of which occurs both in token blends and in the surrogate blend. Segment 2 contains more RSBs, eight compared to three, and there are eight different blended entities compared to the three in Segment 1. Adding to the complexity in Segment 2, four of these eight blended entities occur both in token blends and in surrogate blends. Finally, in Segment 3, there are a total of fifteen RSBs. Interestingly, despite this being almost twice as many Real Space blends as the eight in Segment 2, these fifteen RSBs contain only seven different blended entities, compared to the eight in segment 2.[8] Most of the Real Space blends in Segment 3 are surrogate blends, and with fifteen different RSBs, the blended entities in the segment each occur a large number of times as the signer switches between different RSBs. This seems to increase the complexity of the segment.

Token blends and non-blended sequences, in which the discourse is presented from signer's perspective, tend to create a structure with comparatively few Real Space blends and relatively few discourse entities. Surrogate blends, on the other hand, where signs are produced from the perspective of different discourse entities, create a structure with more Real Space blends, and more discourse entities.

[8] In the RSB analysis of Segment 3, |patients| which are later qualified as |dying patients| are counted as *one* discourse entity.

A surrogate blend can contain both visible and invisible surrogates, and these surrogates can be specific like |EKR|, or non-specific like, e.g. |dying patient| and |person doing lessons|.[9] Sometimes a visible surrogate represents one person out of a group of people, as for example one of |many in audience|. The group of people concerned may have been introduced with several lexical signs, e.g. SICK cl-PERSON-PLUR$^{>|patients|}$ INDEX$^{>|patients|}$. But the group may also never have been explicitly mentioned, and the identity must then be deduced from the context and the current frame, e.g. |audience|, which is identified via the current lecture frame. Even non-concrete entities like ideas can become surrogates, as e.g. |lessons of life|.

Towards the end of a token blend or a non-blended sequence, the signer of the EKR discourse often produces signs that indicate to the addressee whom she will become a visible instance of in the coming surrogate blend. When the signer has blended with one of the discourse entities, and thus become part of a surrogate blend, the signer's hands can either be part of the signer as a surrogate or be *partitioned off*. When the hands are part of the signer as a surrogate, this is analyzed as *constructed dialogue* or *constructed action*. When the hands are partitioned off, however, they add information regarding what the surrogate(s) is/are doing. In the analyzed discourse there are also instances where the surrogate has been analyzed as *backgrounded*, while information is added with signs produced from signer's perspective. This aspect of Real Space blending has not been analyzed in detail in the study.[10]

The other main aim of Study IV is to see whether there is a correlation between how complex a discourse segment is in terms of Real Space blends, and how much difficulty the segment seems to pose for the interpreters. It is hypothesized that the more Real Space blends a piece of signed discourse contains, the more problems there will be for interpreters to produce an equivalent target language discourse in terms of *content units*. The analysis is presented with tables, marking whether two types of content units; *discourse entities* and *relations* respectively, are rendered correctly or not by each individual interpreter. In addition, a more detailed description of each interpreter's rendition of segment 3 of the discourse is also presented.

There appears to be a correlation, indicating support for the hypothesis, in that the more Real Space blends a segment contains, the more problems the segment does seem to cause the interpreters. Segment 1, which is the least complex segment containing only three RSBs, does not seem to cause any major problems for the interpreters in rendering the content units. Only one interpreter failed to render one (1) of the discourse units in Segment 1, a

[9] A surrogate may even be the signer him-/herself at another time/place, though there are no such surrogate blends in this discourse.

[10] Dudis examines the "partitionable zones of the body available to ASL signers" (2004:223), and how they make it possible for signers to create *multiple real-space blends*.

relation. The Real Space blend structure of Segment 2 contains more RSBs than that of Segment 1, eight compared to three, and even though there are fewer discourse entities and fewer relations than in Segment 1, several of the interpreters have difficulties rendering Segment 2 correctly. In the interpretations of this segment, there is a clear tendency that discourse entities are easier to render correctly than relations. Segment 3, which is the most complex segment, with a total of fifteen RSBs, causes the most problems for the interpreters. Here, the number of content units rendered by the interpreters varies from 12, out of a total of 13, to only 1. There is no clear tendency to be found regarding any difference in difficulty between rendering discourse entities and relations in this highly complex segment.

Comments regarding Study IV

One of the advantages of the material used for this study is that the source discourse is controlled so that the eight interpreters saw exactly the same signed discourse. They were able to rewind the video tape if they wanted to see part of it again. With pre-recorded material, the risk of the signer unwittingly adapting her language production to the skills of the interpreter is removed. Another positive factor was that the situation was fairly calm, with only two people present and not much disturbing background noise.[11]

However, as has been mentioned, there are also some disadvantages to this material. The main drawback is probably the artificiality of the situation, and the fact that it is an admittance test, which is likely to make the interpreters quite nervous. Watching signed language on a television monitor reduces the three-dimensional language signal, rendering only two of those dimensions. In addition, the interpreters had nobody to whom they could target their spoken Swedish. With no feedback on what they produced, they also had no indication of whether what they were saying was making sense.

A difference between when and why L1-interpreters and L2-interpreters decided to stop the video tape, and sometimes also rewind it, was observed.[12] Whereas L1-interpreters mainly stopped the video tape to catch up, thus giving themselves time to say what they had already seen and understood, the L2-interpreters mainly stopped and rewound the video tape because they had not understood what they had seen. However, as the linguistic background of the interpreters was not originally part of the study, and no further attempt at determining the language skills of each interpreter has been made, no firm conclusions can be drawn from this.

[11] In addition to the interpreter herself, there was a test administrator who stayed in the room to help with technical matters unless told by the interpreter that this was not necessary or not wanted. The test administrator in some of these cases was me.

[12] The concepts L1-interpreter and L2-interpreter pertains to whether Swedish Sign Language is an interpreters L1 or L2 as discussed in the section Interpreters and their linguistic background in Study IV.

The material was recorded without anyone knowing it would eventually be used for these studies. Thus, even if I had opted for interviewing the interpreters after they had finished their test session, the questions asked then might not have produced the kind of answers that would have been of interest for Study IV.

The language skills of the interpreters have been mentioned briefly. These recordings were made in 1998, and it would be useful to test the language skills of interpreters working between spoken Swedish and Swedish Sign Language today, testing both their working languages. To my knowledge, no study has been published regarding how well interpreters working between these two languages know Swedish and Swedish Sign Language, respectively. Should such a study of their language skills indicate that there is a marked difference in the level of command demonstrated by L1-interpreters and L2-interpreters, then possibly the training of signed language interpreters in Sweden should be changed.

The discourse units used as a crude measure of whether the interpreters' target language renditions are equivalent to the source language message do not cover all of the aspects that need to be taken into consideration when determining equivalence. Despite the shortcomings of the material, however, and though the analysis presented in the tables far from covers all of the aspects necessary to evaluate simultaneous interpretations, the method used in Study IV is still worth exploring further.

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