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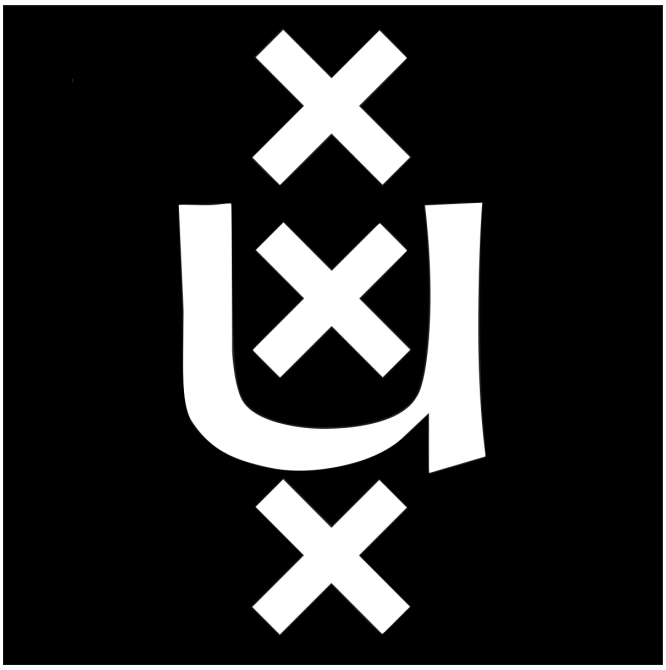

Agent-Backgrounding in Sign Language of the Netherlands: A Corpus Investigation

Bachelor's Thesis

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Abstract

In agent-backgrounding constructions the causer of a linguistic event is pushed out of the focus, that is, it is backgrounded. In this thesis, for the first time, agent-backgrounding strategies were researched in Sign Language of the Netherlands (NGT). This is a corpus-based investigation on impersonalisation strategies such as impersonal uses of personal pronouns (ex. *you*), dedicated referentially deficient pronouns (ex. *someone*), and valency-reducing operations (ex. passive constructions). The results confirm that many of the same strategies are used in NGT as in other spoken and sign languages. These findings are highly relevant, as agent-backgrounding has not previously been researched in NGT, so our study fiills an important gap in the literature.

1. Introduction

With the rise of sign language linguistics in recent years, a variety of concepts have become evident. By now, a plethora of studies on various domains of sign language grammar has contributed to demonstrating that sign languages and spoken languages have overlapping structures, that is, numerous structures identified for spoken languages have also been identified in sign languages. Consequently, an increasing number of these theoretical notions become relevant, including agent-backgrounding and the connected notion of impersonalisation, which has been attested in both sign and spoken languages (Rissman et al., 2020).

Agent-backgrounding is defined as "the process of filling an argument position of a predicate with a variable ranging over sets of human participants without establishing a referential link to any entity from the universe of discourse" (Breed & Van Olmen, 2021, p. 171). What this means is that the causer of a linguistic event is placed into the background of a situation. In (1a) the subject 'you' does not refer to a specific individual, rather to a general group of people. This is an example of agent-backgrounding because no specific reference is made to "any entity from the universe of discourse" (Breed & Van Olmen, 2021, p. 171). (1b) is another example of agent-backgrounding, because 'someone' can be generalised to all people, not to a specific individual referent (Barberà & Cabredo Hofherr, 2018), so the agent of the utterance is backgrounded. Another example of agent-backgrounding is (1c), because this is a passive construction in which the agent is only implied, not explicitly mentioned.

(1) a. You only live once.
(English, Breed & Van Olmen, 2021, p. 179)
b. Someone repaired the lift.
(English, Barberà & Cabredo Hofherr, 2018, p. 185)
c. The lift was repaired.
(English, Barberà & Cabredo Hofherr, 2018, p. 185)

Agent-backgrounding and impersonalisation strategies have been extensively researched in a number of spoken languages, as well as a handful of sign languages. However, no such research has been done into strategies in Sign Language of the Netherlands (NGT). This lack of research into NGT and agent-backgrounding has led to the question:

How is agent-backgrounding realised in Sign Language of the Netherlands, and how do the available strategies resemble those of other spoken and sign languages?

The current study aims to fill a gap in the literature, by investigating agent-backgrounding strategies in NGT. We first discuss previous research on sign and spoken languages and their agent-backgrounding strategies in Chapter 2. In Chapter 3, we provide information about the methodology of this corpus-based study. Subsequently, in Chapter 4, we analyse the results obtained on basis for the corpus data, and in Chapter 5, we consider the implications of these from an intra-modal and cross-modal perspective.

2. Agent-Backgrounding Across Modalities

A variety of domains are relevant to consider in examining the concept of agent-backgrounding, including how these strategies are found to be realised in other sign languages, as well as spoken languages. Specifically research into Dutch may be relevant, as – although NGT is an independent language with its own grammatical rules –the deaf NGT community is surrounded by the hearing and Dutch-speaking culture of the Netherlands, which may cause some overlap due to language contact. Common agent-backgrounding strategies that have been identified in previous studies will be discussed in the following section.

2.1 Relevant Grammatical Aspects of NGT

In order for the reader to appreciate the sign language examples we will present, we need to introduce two relevant grammatical aspects of NGT: use of space and non-manuals.

Sign languages are visual-spatial languages, meaning that the use of space is important. When signing, specific locations (or loci) in the signing space can be employed to refer to specific referents, both present and non-present (De Vos & Pfau, 2015). In *Figure 1* the use of the pointing sign glossed as INDEX 1, 2, and 3 is displayed. IX_1 refers to first person, IX_2 refers to second person, usually a present referent, and IX_3 refers to third person, a present or non-present referent.

sign	IX_1	IX_2	IX_3
non-manual	*mouthing*	*mouth movement*	*eyebrow raise*

Figure 1. Examples of various uses of pointing signs (IX) and non-manuals. Modified from Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

A further relevant grammatical aspect of NGT is the use of non-manuals. Non-manual markers refer to “facial expressions and head and body movements” (De Vos & Pfau, 2015, p. 274). This can include mouth, eye, and head movements, as well as eyebrow, lip and tongue movements that are used to convey lexical or grammatical information. Pragmatic body leans can also be used (De Vos & Pfau, 2015). In *Figure 1* some non-manuals accompanying the pointing signs are distinguishable, namely a mouthing (i.e., the silent articulation of a Dutch word), a mouth gesture, and an eyebrow raise (which may indicate a topic constituent or a polar question).

2.2 Agent-Backgrounding Strategies

Varying classifications of agent-backgrounding strategies exist. For example, Kelepir et al. (2018) examines various strategies of agent-backgrounding used in Turkish Sign Language (TID). These include "no overt expression of the agent", "null subjects interpreted as impersonal 3rd person plural pronouns", "1st and 2nd person pronouns with generics uses", and "indefinite agents expressed with pronouns and/or verb agreement" (Kelepir et al, 2018, p. 258). However, in the current study, we follow the work of Barberà & Cabredo Hofherr (2018) in distinguishing four types. We will address these four types in turn, exemplifying them with examples from spoken languages, sign languages, and Dutch. At the end, we will discuss specific phenomena that seem to be relevant only in sign languages, i.e. modality-specific phenomena. Many examples below are taken from the *Sign Language & Linguistics* special issue on *Impersonal Human Reference in Sign Languages*, which focuses on a variety of sign languages including, among others, Russian Sign Language (RSL), Catalan Sign Language (LSC), and Turkish Sign Language (TID), however contains no research on NGT.

2.2.1 Impersonal uses of personal pronouns

Two categories of impersonal uses of personal pronouns can be distinguished. The first category is antecedentless 3rd person plural. This means that the referent, which generally would be known, is unspecified (Barberà & Cabredo Hofherr, 2018). This is clear in (2), as the referent 'they' is an unspecific, unidentified entity.

(2) They repaired the lift.
(English, Barberà & Cabredo Hofherr, 2018, p. 185)

The second category is non-deictic, 2nd person singular or 1st person plural. This means that the referent "can be paraphrased by 'people in general'" (Barberà & Cabredo Hofherr, 2018, p. 187), as in (3). The sentence 'You only live once' is equivalent in meaning to the sentence 'People in general only live once'. The same is the case in (4) and (5), where the semantic meaning would remain the same if *je*/IX$_2$ ('you') was replaced with 'people in general' (see **Appendix A** for glossing conventions of sign language examples).

(3) IX$_2$ LIVE ONE TIME
'You only live once.'
(RSL, Kimmelman, 2018, p. 222)

(4) Je leeft maar één keer.
you live only one time
'You only live once.'
(Dutch, adapted from Coussé & van der Auwera, 2012, p. 123)

(5) br
hth
IX$_2$ PREGNANT, HEAVY SOMETHING LIFT NOT NECESSARY
'If you are pregnant, you should not lift something heavy.'
(TID, Kelepir et al., 2018, p. 264)

In different languages, different pronouns can appear in different contexts. In Dutch these are the first person plural *we*, the second person singular *je*, and the third person plural *ze*. For practical reasons, it was decided to focus on the 2nd person singular (*je*) for this study, simply because this is expected to be the most common (see also Section 3.2).

2.2.2 Dedicated referentially deficient pronouns

Another impersonalisation (and thus agent-backgrounding) strategy are dedicated referentially deficient pronouns, which exist in two forms: pronouns with generic readings and indefinite pronouns (Barberà & Cabredo Hofherr, 2018). An example of a pronoun with a generic reading is presented in (6). Here, *men* ('one') is not referring to a specific agent, but rather to a general you, indicating a generic understanding of the pronoun.

(6) Men praat er al over in de stad
one talks there already about in the city
'One talks about it already in the city.'
(Dutch, adapted from Coussé & van der Auwera, 2012, p. 122)

Examples of indefinite pronouns are provided in (7) and (8). In both examples, a version of a lexical item meaning 'someone' is used, referring to an indefinite referent that can be generalised to all people (Barberà & Cabredo Hofherr, 2018). In (8), taken from TID, the complex gloss ONE^PERSON^C_PERSON is translated as 'someone'. A complex gloss refers to cases where multiple signs comprise one word (the diacritic '^' indicates compounding). The non-manual, 'non-sp', above ONE^PERSON^C_PERSON refers to a non-manual associated with non-specificity. This use of a non-manual for impersonalisation will be further discussed in *Section 2.2.5*.

(7) Someone repaired the lift.
(English, Barberà & Cabredo Hofherr, 2018, p. 185)

(8) non-sp
ONE^PERSON^C_PERSON DOORBELL PRESS
'Someone is ringing the door.'
(TID, Kelepir et al., 2018, p. 265)

2.2.3 Null subjects of non-finite predicates

There are two categories of null subjects of non-finite predicates. First, null subjects of non-finite predicates can be of infinitives, like in example (9), where the reference is unclear but can be recovered from the available context (Kelepir et al., 2018). The second category involves the use of gerunds/participles (Barberà & Cabredo Hofherr, 2018), like in (10), in which the gerund 'making' is used. This strategy will not figure in our analysis of NGT data for practical reasons (see Chapter 3 for further explanation).

(9) It is advisable to look after one's children.
(English, Barberà & Cabredo Hofherr, 2018, p. 186)

(10) Making this recipe takes a lot of time.
(English, Barberà & Cabredo Hofherr, 2018, p. 186)

2.2.4 Valency-reducing operations

As with the other strategies, there are two different categories of valency-reducing operations. The first category, passives, involves an unmentioned, implied agent (Barberà & Cabredo Hofherr, 2018). According to Janzen, O'Dea & Shaffer (2001), passives can be structured in two ways: "(1) by putting or keeping a patient in focus in the verb complex, and (2) by defocusing the agent" (Janzen, O'Dea & Shaffer, 2001, p. 306). (11) displays this passive concept, because 'the house', which is the underlying object of 'buy', functions as subject, but is undergoing an act executed by an agent, who is unnamed, and thus defocused. Here the subscript 'c' indicates a locus in neutral signing space (Barberà & Cabredo Hofherr, 2015). This strategy is further illustrated by the Dutch examples in (12), and (13), where again, the underlying object functions as a subject undergoing an act by an unnamed agent. Example (12) further shows that Dutch has an expletive element *er*, which can be used to fill the subject position in such contexts.

(11) HOUSE BUY$_c$ ALREADY.
'The house was bought.'
(LSC, Barberà & Cabredo Hofherr, 2015, p. 16)

(12) Er wordt op de deur geklopt.
there becomes on the door knocked
'There is a knock on the door.'
(Dutch, Breed & Van Olmen, 2021, p. 194)

(13) De belastingen zijn weer verhoogd.
The taxes are again raised
'Taxes have been raised again.'
(Dutch, Breed & Van Olmen, 2021, p. 172)

The second category of valency-reducing operations is middles, which "allow readings with and without agents" (Barberà & Cabredo Hofherr, 2018, p. 187). The Spanish sentence in (14) is an example of this, as it allows for two readings. One reading is 'The door opens easily', which has an anticausative interpretation. The second reading is 'The door is easy to open', which has an unaccusative interpretation.

(14) La puerta se abre fácilmente.
the door REFL open.PRS.3SG easily
'The door opens easily/is easy to open.'
(Spanish, Barberà & Cabredo Hofherr, 2018, p. 186)

2.2.5 Modality-Specific Agent-Backgrounding Strategies

Beyond the modality-independent strategies introduced above, some modality-specific strategies for agent-backgrounding also exist, which occur only in sign languages, including use of the signing space in front of the signer and of non-manuals.

The first strategy discussed is the use of space, specifically a high locus being used to indicate non-specificity (Barberà & Cabredo Hofherr, 2017, p. 770). According to Kelepir et al. (2018), when a high locus is used, it is always associated with a non-specific referent; however, when a central-low locus is used, it can be associated with either specificity or non-specificity. In (15), a lateral high spatial locus is used, and is therefore distinctly interpretable as referring to a non-specific 'someone', even in the absence of an overt referent. In (16) a central-low locus is used, which means it could be interpreted as specific or non-specific (in this particular case, it is non-specific). Note that here we complement the example from Kelepir et al. with non-manuals specified in a preprint version.

(15) ae
lmc
bf
3lat-highSEND.LETTER1
'Someone (non-specific, exclusive to our group) sent a letter to me.'
(TID, Kelepir et al., 2018, p. 270)

(16) ae
lmc
bf
$POSS_1$ SHOE $ONE_{central\text{-}low}$ $_1STEAL_{3.central\text{-}low}$
'Someone (non-specific, inclusive to our group) stole my shoe.'
(TID, Kelepir et al., 2018, p. 271)

A high locus construction can be characterised in a number of ways. According to Barberà & Cabredo Hofherr (2015), the "agent is left unexpressed", there is "an inflected verb", there is "agreement between a high locus for the subject argument that has not been previously activated", and "with animate patients" there is "role shift of the signer to the patient, marked by averted eyegaze and body lean" (Barberà & Cabredo Hofherr, 2015, p. 15). In (17), and (18), these characteristics are observed; as the agent is unexpressed, and as the objects are inanimate, no role shift occurs.

(17) POT FLOWER BREAK-3_{up}.
'They broke the flower pot.'
(LSC, Barberà & Cabredo Hofherr, 2015, p. 16)

(18) br
BIKE, $_c$STEAL-3_{up}.
'They stole the bike.'
(LSC, Barberà & Cabredo Hofherr, 2015, p. 17)

The other modality specific strategy we will discuss is the use of non-manuals. The presence of non-manual markers of specificity, such as “brow furrowing, lowered mouth corners and averted eye gaze” (Kelepir et al., 2018, p. 264) clarifies the central-low locus specificity. When these non-manuals are present in an utterance signed in a central-low locus, as in (16), the utterance is interpreted as non-specific, and when they are absent it is interpreted as specific (Kelepir et al., 2018, p. 264). In (19) an uncertainty non-manual marker is also employed over the indefinite pronoun SOMEONE to indicate uncertainty over the identity of ‘someone’ (Kimmelman, 2018). This further illustrates the use of non-manuals in specificity clarification.

(19) uncertain
SOMEONE BIKE STEAL
‘Someone has stolen my bike.’
(RSL, Kimmelman, 2018, p. 216)

Beyond this use of non-manuals to clarify specificity, non-manuals may also be used when signing impersonal 3rd person plurals. In the case of (20), the mouthing of the plural form of the Turkish verb is used in addition to the sign (Kelepir et al., 2018), which is a further indication of agent-backgrounding. This is displayed in (20), where the Turkish *yapıyorlardı* (‘they were making’) is mouthed during sign production.

(20) (IX$_1$ CHILD OUR HOUSE NEAR PARK EVERY EVENING BARBECUE)
__/japıjorlardı/
∅MAKE-3pl
‘When I was a child, in the park near our house, they/people (impersonal) used to have barbecue every evening’
(TID, Kelepir et al., 2018, p. 262)

2.3 Research Question & Predictions

Overall, previous research into agent-backgrounding and impersonalisation provides evidence that a variety of strategies are employed across languages and modalities. Within languages in general, these include impersonal uses of personal pronouns, dedicated referentially deficient pronouns, null subjects of non-finite predicates, and valency-reducing operations. Within sign languages other than NGT, the same strategies are attested, as well as use of space and non-manuals as agent-backgrounding strategies. On the basis of these previous findings, we formulate our research question.

How is agent-backgrounding realised in Sign Language of the Netherlands, and how do the available strategies resemble those of other spoken and sign languages?

On the one hand, we predict that many of the same strategies of agent-backgrounding are found in NGT as in Dutch. As mentioned above, these strategies may include impersonal uses of personal pronouns, dedicated referentially deficient pronouns, null subjects of non-finite predicates, and valency-reducing operations. This is supported by the results of Kelepir et al. (2018), who stated that “preferences were possibly strongly influenced by the strategies used in the Turkish sentences that the signers were asked to translate” (Kelepir et al., 2018, p. 258).

This suggests the possibility of language contact between the sign language and surrounding spoken language, which may be reflected in NGT as well. Crucially, however, this study does not involve a translation task but rather is based on naturalistic corpus data.

Furthermore, we predict that there are similarities in the agent-backgrounding strategies employed in other sign languages and NGT. This prediction is again supported by Kelepir et al. (2018), who found similar strategies in TID as in other languages.

3. Methods

3.1 Corpus NGT

In regards to the methodology, as the title states, the current study is a corpus investigation of agent-backgrounding strategies in NGT. The Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008) is a publicly available platform created by Crasborn, Zwitserlood, and Ros at Radboud University. On this platform, 72 hours of linguistic video data is stored. 92 deaf signers, between the ages of 17 and 84, are recorded in these videos, retelling cartoons or fairytales in NGT or engaging in discussions regarding Deafness. These prelingually deaf signers come from various regions across the Netherlands, as well as different age groups, genders, and educational backgrounds. A number of these videos are annotated, over a variety of tiers, using ELAN, an annotation tool. For the current study, two tiers are crucial: gloss and translation. On the base of annotations on these tiers the corpus results are analysed.

3.2 Search Procedure

Searching the corpus for impersonalisation strategies is faced with multiple challenges. The most substantial challenge is that almost none of these strategies are annotated as such on the gloss tier, and therefore the translation tier must be analysed. This leads to an abundance of irrelevant search results, particularly with 1st and 2nd person pronouns with a generic use (*je, we, ze*). Going through all the search hits in order to identify relevant cases is not feasible. For this reason, more specific search terms were chosen in order to narrow down search results. The gloss tier was also analysed for cases in which the terms do appear annotated as the gloss is equivalent to the search term.

A study, which has helped identify corpus search terms, is Breen & van Olmen (2021). In this study impersonalisation strategies in Afrikaans and Dutch were compared in another large-scale corpus investigation, specifically concentrating on passives as a strategy. Breen & van Olmen (2021) mention various methodological challenges that a corpus investigation on impersonalisation strategies brings, as well as solutions. To solve the issue of disproportionate irrelevant results arising, the study searched “for every past participle that features a form of one of the passive auxiliaries” (Breen & van Olmen, 2021, p. 183) like “*word, werden, is,* and *waren* in Dutch” (Breen & van Olmen, 2021, p. 183). We faced this difficulty in our corpus research as well, so this solution is pertinent to our corpus investigation.

A further relevant study in determining search terms is one by Coussé & van der Auwera (2012), which compared impersonal pronouns in Swedish and Dutch, also tackling the issue of impersonalisation strategies. In this large-scale corpus study, which included 3991 instances of the Swedish and Dutch impersonal pronouns *man* and *men*, referring to people in general, the frequency of use of these, as well as various equivalent strategies was analysed (Coussé & van der Auwera, 2012). The results showed that *men* in Dutch is frequently used in more formal contexts, while the competing strategies, which Coussé & Van der Auwera (2012) refer to as congruent subjects (ex. *je, ze, we, iemand, mens,* and *mensen)*, could also be used to express impersonal reference. Furthermore, agentless passives were used for the same purpose (Coussé & van der Auwera, 2012). This study is highly relevant to the current research, as it provides possible items to search for within NGT. Although NGT is independent from Dutch, due

to the cultural impact of existing within the larger hearing Dutch community, NGT is expected to show some influence from Dutch due to language contact.

Given the above considerations, the search terms which we decided to include were:

1) Impersonal uses of personal pronouns: We searched for the second person pronoun *je* in combination with certain particles or verbs, i.e., combinations that commonly (but not always) express impersonal meaning, such as *als je* ('if you')*, je hebt* ('you have')*, wanneer je* ('when you')*, moet je / je moet* ('must you' / 'you must')*, kan je / je kan* ('can you' / 'you can')*;*
2) Dedicated referentially deficient pronouns: we searched for common pronouns which may be used in referentially deficient contexts, such as *iemand* ('someone')*,* and *men* ('one')*;*
3) Valency-reducing operations: we searched for auxiliaries, in combination with the expletive element *er*, i.e., *werden*, *er werden*, *er worden, er wordt,* and *er zijn*, as these auxiliaries and combinations are frequently found in passive contexts.

Of these terms, only the items MEN and IEMAND could potentially be present on the gloss tier, and were thus also searched on the gloss tier. Items which would be only present on the translation tier included *werden*, *er werden*, *er worden, er wordt, er zijn, als je, je hebt, wanneer je, moet je / je moet,* and *kan je / je kan.* In this case, we were interested in how the impersonal meaning was encoded in NGT. Other relevant terms would have included the verbs/auxiliaries *wordt*, *worden*, *waren*, the nouns *mens*, *mensen* ('human(s)/people'), and the personal pronouns *je*, *we*, *ze*. However, these terms (some of which would likely be present on the translation and gloss tier) were considered too broad to research given the expected large amount of results. Importantly, all of these items are likely to occur with high frequency outside of impersonal constructions. This made them infeasible to analyse, and therefore, they have been excluded in the current study. Besides this, inclusion of null subjects of non-finite predicates was also not considered feasible in the context of this study for the simple reason that there are no clearly defined search items. Therefore, this category defined by Barberà & Cabredo Hofherr (2018) was not searched for. However, some coincidental findings will be discussed in *Section 4.2.4.*

In addition to these strategy searches, we analysed the sign language specific strategies as well, that is, for the examples extracted, we also analysed the non-manuals and the locus height used.

3.3 Corpus Search, Annotations & Analysis

We searched multiple eaf files in ELAN (Crasborn & Sloetjes, 2008), consisting of a defined search domain of all Corpus NGT video data. The above terms were searched one-by-one. Potentially relevant examples were compiled in an Excel sheet, and were then manually searched and viewed in order to determine their relevance. The search yielded 783 initial examples. However, after closer inspection 194 examples had to be discarded, as they turned out to be irrelevant to the current study. In the end, 589 examples were found to be relevant and therefore used for this study. Irrelevant results included examples which were from a different tier, examples in which search terms were repeated within the same utterance, and examples where the search terms were clearly not part of an impersonal construction.

In (21) an example of an irrelevant search hit is shown. Here the personal pronoun *je* is used in a context that, at first sight, looks similar to the impersonal example (5); however, from the context, it is clear that this is not an impersonal use of the second person pronoun IX_2, but rather that the pronoun refers to the addressee. Therefore, this example is irrelevant to the current study (note that in the following, the corpus glosses are translated into English; also, for examples extracted from the corpus, we provide an English translation as well as the original Dutch translation between brackets, as this allows us to specify the relevant search term by means of bold face; finally, corpus examples are accompanied by a code which specifies the video, signer, and timestamp of the utterance).

(21) IX_2 PREGNANT IX_2 DEAF CHILD IX_2 HOPE WANT IX_2 DEAF PALM.UP
'But if you become pregnant, would you want a deaf child then?'
(Maar **als je** zwanger wordt, zou je dan een doof kind willen?)
(0135-S008-00:57.320)

The examples that, after initial inspection, appeared to be relevant to the study, were further analysed. To that end, we created a Tier on ELAN named AB_Strategy (standing for Agent-Backgrounding Strategy) with the Tier Type AB_Strategy, and a controlled vocabulary, with which we annotated all relevant results on the translation tier. The relevant utterances were annotated with one of four controlled vocabularies:

1. Imp_pers_pron: standing for impersonal uses of personal pronouns
2. Ref_def_pron: standing for dedicated referentially deficient pronouns
3. Val_red_op: standing for valency-reducing operations
4. Other: referring to any strategies that do not fit the defined categories

We then also created a tier named NGT_Strategy with the Tier Type NGT_Strategy, and a controlled vocabulary, with which we annotated what occured on the gloss tier of the relevant translation tier results. The utterances were annotated with one of seven controlled vocabularies:

1. IX: standing for INDEX
2. NM: standing for non-manual
3. H_Locus: standing for high locus
4. L_Locus: standing for central-low locus
5. Null: standing for null subject
6. Sign: reffering to a specialized sign
7. Other: referring to any strategies that do not fit the defined categories, or possible inconclusive results

Figure 2 shows an example of a relevant search result annotated in ELAN. In this example, the utterance produced is the one in (22), which includes an instance of agent-backgrounding. The search item *men* is translated to NGT as involving an impersonal use of a personal pronoun, which is glossed as IX_2. For this reason, this example is relevant to the current study.

(22) THINK ADAPT IX$_2$
‘One can adapt.’
(**Men** kan zich aanpassen)
(0132-S008-01:42.040)

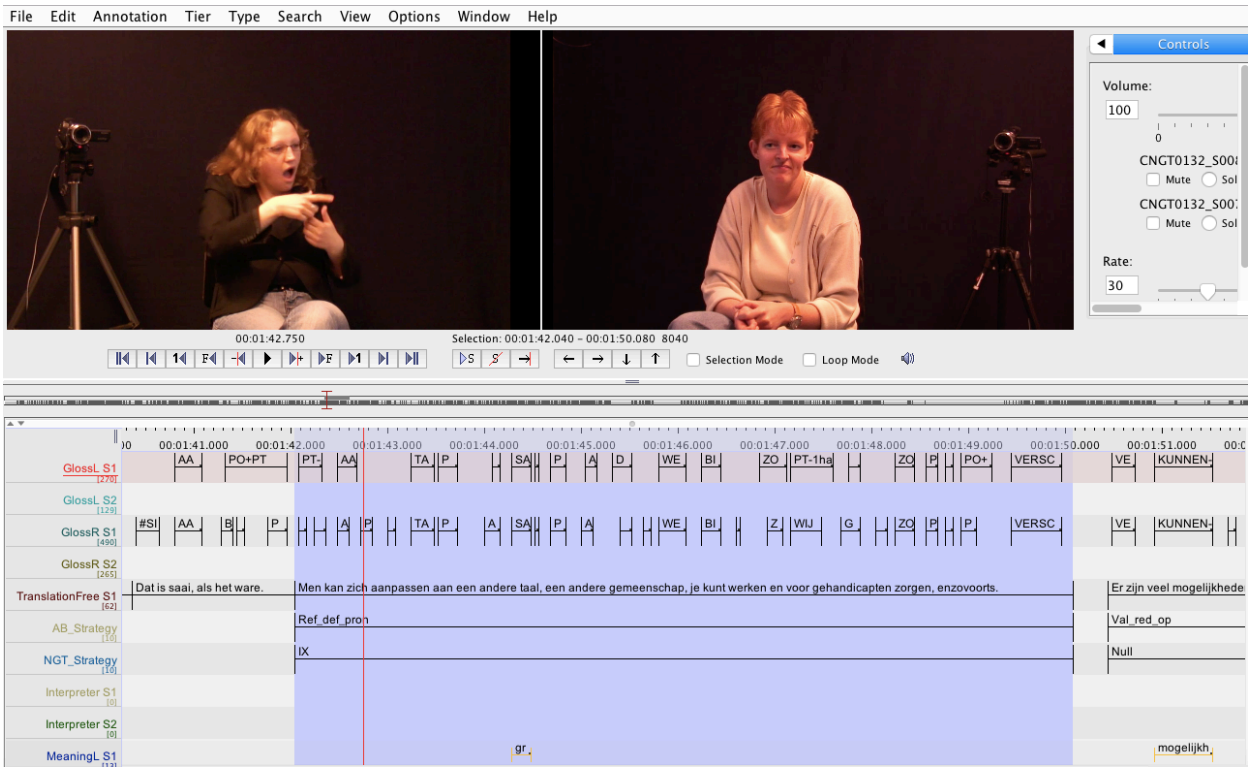

Figure 2. ELAN Annotation of Relevant Corpus Data. From Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

4. Results

4.1 Quantitative Results

Only IEMAND and MEN were searched on the gloss tier, however MEN did not occur. All other search items were searched on the translation tier. For the examples found, we examined whether they were relevant. For those examples that appeared to be relevant (i.e. involving agent-backgrounding) based on the translations, we analysed the gloss tier to see how this was encoded in NGT.

Table 1 displays the number of relevant and irrelevant search results, as well as the total number, for each search term on the translation and gloss tier. 75.2% of all search hits were relevant. Of these, 59.6% were impersonal uses of second person personal pronouns (remember that we only focused on this pronoun type), 23.8% were dedicated referentially deficient pronouns, and 16.6% were valency-reducing operations. The search term *men* did not occur on the gloss tier.

Category	Search Terms	Relevant	Irrelevant	Total
Impersonal uses of 2nd person pronoun Total of relevant hits: 351 (59.6%)	*Als je*	119	41	160
	Je hebt	31	29	60
	Je moet / Moet je	133	31	164
	Je kan / Kan je	58	17	75
	Wanneer je	10	0	10
Dedicated referentially deficient pronouns Total of relevant hits: 140 (23.8%)	*Iemand*	98	63	161
	IEMAND	4	3	7
	Men	38	0	38
Valency-reducing operations Total of relevant hits: 98 (16.6%)	*Werden*	20	6	26
	Er werden	2	0	2
	Er worden	2	0	2
	Er wordt	17	1	18

	Er zijn	57	3	60
Total		589	194	783

Table 1. Overview of search results from translation and gloss tier, divided into the three categories relevant for the present study

Table 2 displays the number of times in which each strategy type was found in the relevant results of *Table 1*. Use of INDEX (IX_2) accounted for 23.1% of the data. Non-manuals occurred 0.5% of the time. Signs at a high locus occurred 1.7% of the time. Signs at a central-low locus occurred 0.7% of the time. Null subjects accounted for 53.1% of the data. Specialized signs occurred 3.1% of the time. And 'other' (undescribed strategies or inconclusivities) accounted for 17.8% of the data.

Search Terms	IX	NM	H_Locus	L_Locus	Null	Sign	Other
Als je	44	0	4	2	49	0	19
Je hebt	8	0	0	1	12	0	10
Je moet / Moet je	24	0	2	0	78	0	29
Je kan / Kan je	14	0	0	0	33	0	12
Wanneer je	5	0	0	0	3	0	2
Iemand	31	0	1	1	38	13	14
IEMAND	0	0	0	0	0	4	0
Men	8	0	3	0	20	1	6
Werden	0	0	0	0	17	0	3
Er werden	0	0	0	0	1	0	1
Er worden	0	0	0	0	2	0	0
Er wordt	0	0	0	0	17	0	0

Er zijn	2	3	0	0	43	0	9
Total (/589)	136	3	10	4	313	18	105
Total (%)	23.1	0.5	1.7	0.7	53.1	3.1	17.8

Table 2. Overview of search results of NGT agent-backgrounding strategies found, divided into the seven categories relevant for the present study

4.2 Agent-Backgrounding Strategies

The results revealed a number of strategies which can be identified across the different agent-backgrounding categories. Remember that all search items, except for the gloss IEMAND, were searched on the translation tier. However, in the following subsections, we will classify the examples based on the strategy used in NGT (see Table 2). Importantly, the NGT strategy is often different from the strategy used in the translation; e.g., the search hit *men* ('one') on the translation tier might present us with an NGT example in which a second person pronoun is used with impersonal meaning. Furthermore, many of these examples include modality-specific strategies, specific to sign languages, in which case they will be labelled as such. In the following subsections, these categories will be addressed in turn, describing each apparent strategy.

4.2.1 Dedicated referentially deficient pronouns

As can be seen in Table 1, our search for IEMAND (SOMEONE) on the gloss tier yielded only 4 hits, one of which is presented in (23). In (23) a specific sign is used meaning SOMEONE. This term is not present in the NGT online dictionary and is the only manual sign found for IEMAND. However, our search for *iemand* on the translation tier yielded additional examples in which another manual sign is used to express the meaning of 'iemand', namely the sign EVERYBODY (ALLEMAAL). In (24) and (25), the sign EVERYBODY is used as a referentially deficient pronoun, translated as 'someone' and 'one', respectively. (24) also includes the mouthing of the dutch word *zwanger* meaning 'pregnant', which is a sign language specific strategy. (26) includes the sign PERSON (PERSOON), which, in this example, has the meaning of *someone* as well. All four signs are depicted in *Figure* 3. {A} depicts a version of SOMEONE and {B} and {C} depict two versions of EVERYBODY. One further example is (27), in which the compound sign DIFFERENT^PERSON is used to mean SOMEONE.

(23) ...IX$_2$ SOMEONE HELP ACCOMPANY IX$_2$ AT.HOME…
'...for blind people someone to help at home...'
(...voor blinden **iemand** om thuis te helpen...)
(0128-S007-04:13.060)

(24) zwanger
IF EVERYBODY PREGNANT KNOW IX$_3$ DEAF OR HEARING IX$_3$
'If someone is pregnant, she wants to know if it (the child) is deaf or hearing.'
(Als **iemand** zwanger is, wil ze graag weten of het doof of horend is.)
(0098-S001-00:05.200)

(25) IX$_2$ PALM.UP WANT NGT IX$_2$ EVERYBODY TRY SAME SIGN LANGUAGE IX$_2$ ALLOWED PALM.VERT PALM.UP
'One wants that NGT, as a language, looks the same, they need to know it for themselves.'
(**Men** wil graag dat NGT er als taal hetzelfde uitziet, dat mag, dat moeten ze zelf weten.)
(1683-S069-00:33.330)

(26) IMAGINE PERSON DECIDE IX$_2$ CI IMPLANT
'If someone decides to get a CI'
(Als **iemand** besluit een CI te plaatsen)
(0529-S025-00:04.000)

(27) SAME IF DIFFERENT^PERSON DIFFERENT PERSONAL COME NETHERLANDS
'Same as if someone with a different language who comes to the Netherlands'
(Net als **iemand** met een andere taal die naar Nederland komt)
(2036-S081-00:29.920)

{A} {B} {C} {D}

Figure 3. Use of a dedicated referentially deficient pronouns {A} SOMEONE in (23), {B} EVERYBODY in (24), {C} EVERYBODY in (25), and {D} PERSON in (26). Modified from Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

4.2.2 Impersonal uses of personal pronouns

Our search on the translation tier yielded a fair number of examples in which pointing to the second person locus is used in an impersonal construction. In (28), for instance, the signer points at the addressee multiple times, but from the context, it is clear that she does not refer to the interlocutor, i.e., we are dealing with an impersonal use of IX$_2$. In *Figure 4* you can see the use of IX$_2$, which is translated as *als je*. This figure shows the first use of IX$_2$ in the sentence. In (29) and (30) the same pattern is visible, where the signer uses IX$_2$, translated as *als je* and *men*.

(28) HEARING SCHOOL IX2 SCHOOL PALM.UP IX2 SIGN IX2 HEARING LOOK PALM.UP
'If you signed at a hearing school, they (the hearing people) would look at you weird.'
(**Als je** op een horende school gaat gebaren, zullen ze raar opkijken.)
(1792-S073-00:16.680)

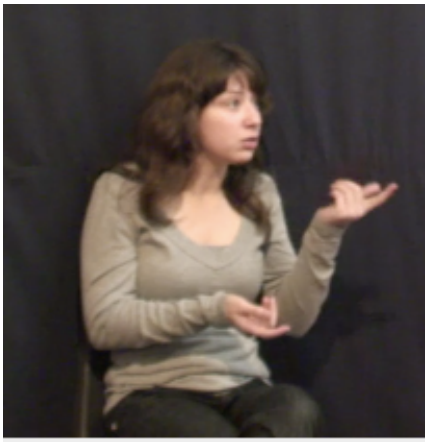

Figure 4. Use of pointing for impersonal use of personal pronoun in example (28). From Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

(29) IF BAD HEARING IX2
'If you are hard of hearing'
(**Als je** slechthorend bent)
(0096-S001-01:52.090)

(30) THINK ADAPT IX2
'One can adapt.'
(**Men** kan zich aanpassen)
(0132-S008-01:42.040)

The search also yielded a few examples of the use of high and central-low loci for INDEX in impersonal contexts. These loci are visible in *Figure 5*, in which you can see examples (31) and (32). In (31) when signing IX2, the signer uses a high locus, possibly indicating impersonalisation, which is why it is translated to *men*. In (32), when signing IX2, the signer uses a central-low locus, possibly to indicate non-specificity, translating to an impersonal *je hebt*. As pointed out before, the use of these loci is a sign language specific strategy.

(31) IX2high ONLY SAY
'One says'
(**Men** zegt)
(0330-S016-00:03.600)

(32) IX$_{2central-low}$ AMSTERDAM GRONINGEN ROTTERDAM IX$_2$ REGION
'You have Amsterdam, Groningen, Rotterdam.'
(**Je hebt** Amsterdam, Groningen, Rotterdam.)
(1683-S069-00:08.780)

high locus central-low locus

Figure 5. Use of high locus and central-low locus pointing for impersonal use of personal pronoun in example (31) and (32) respectively. Modified from Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

4.2.3 Valency-reducing operations

For valency-reducing operations, a strategy which can be identified is the use of non-manuals, which is a sign language specific strategy. (33) seems to reveal the use of an averted eye gaze when referring to unspecified referents. When IX$_3$ is used at the end of this utterance, it refers to the same locus as the averted eye gaze at the beginning of the utterance. In (34) we see the use of a body lean to indicate a momentary role shift, suggesting an unnamed agent who hugged them. *Figure 6* exhibits the uses of these non-manuals. Furthermore, this use of roleshift is clear in (35), where the unnamed, implied agent's role is taken on to reveal the signer as patient.

(33) ae
HAVE DIFFERENT SAME HEARING SAME PALM.UP IX$_3$
'There are different deaf people that are the same as hearing people.'
(**Er zijn** verschillende doven die dezelfde zijn als horenden.)
(0128-S008-05:19.145)

(34) bl
GOOD HUG IX$_1$
'We were hugged.'
(We **werden** omhelsd)
(0049-S006-03:48.200)

(35) _____rs
IX2 MUST GO HEARING SOCCER
'We were sent to hearing soccer.'
(We **werden** naar horend voetbal gestuurd.)
(0099-S001-03:09.040)

averted eyegaze body lean

Figure 6. Use of averted eyegaze in example (33) and body lean in (34). Modified from Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

4.2.4 Null Subjects

Many examples were coincidentally found to use null subjects as a strategy of agent-backgrounding. Remember that these were not initially part of the search, however results yielded a very high amount of these as examples, with 53.1% of all data falling into this category. (36), (37) and (38) all show examples of this, in which there is no agent named at all, however it can be pieced together from the given context. In all cases it is translated to a relevant search term, however these terms are not reflected in the gloss.

(36) CALL FEEL YES DEPENDENT
'If you always have to call someone, you feel dependent.'
(Als je steeds **iemand** moet raadplegen, dan voel je je afhankelijk.)
(0058-S006-03:24.720)

(37) TO GOOD REASON ABORTION OKAY PALM.UP
'If you have a good reason, then abortion is okay.'
(**Als je** een goede reden hebt, dan is een abortus wel oke.)
(0132-S008-02:33.520)

(38) NOW BUSY
'One is now busy with'
(**Men** is nu bezig met)
(0256-S013-01:10.440)

4.2.5 Coincidental findings: further examples

We came across some coincidental findings while manually analysing for relevant search results. For example, while we only searched on the translation tier for of the second person pronoun *je* used in impersonal constructions, we coincidentally came across example (39), which involves the impersonal use of another personal pronoun, namely the third person: here IX3 is used in referring to *ze*. This suggests that further strategies exist, beyond those discussed in this paper, which opens avenues for future research. Further research is necessary to verify our coincidental finding.

(39) IF EVERYBODY PREGNANT KNOW IX3 DEAF OR HEARING IX3
'If someone is pregnant, she wants to know if it (the child) is deaf or hearing; wait a moment.'
(Als **iemand** zwanger is, wil ze graag weten of het doof of horend is.)
(0098-S001-00:05.200)

A further coincidental finding is the use of classifiers in impersonalisation, which is a sign language specific strategy. In the case of (40), the translation suggests that *je* is impersonal, however to represent this in NGT, the signer uses a human classifier handshape (visible in *Figure7)*, showing one person entering a group of multiple people.

(40) MAAR MOVE.CL GROUP
'When you enter a group'
(**Wanneer je** vervolgens in een groep komt)
(0254-S013-01:44.400)

Figure 7. Use of human classifier in example (40). From Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

5. Discussion

In this chapter, the varying categories are discussed in turn, and are compared to data from other sign and spoken languages. Furthermore, the relation between the gloss and translation tier will be explored, as well the use of PALM.UP, and limitations of a corpus study.

5.1 NGT in the bigger picture

In this section, we will be situating NGT in the bigger linguistic picture, comparing the strategies found for NGT to other languages' strategies.

As we know, the impersonal use of the 2nd person pronoun *you* occurs in many spoken languages. This has also been shown to occur in sign languages, like in (41), where this is visible in a phrase from RSL. In (42) we see the same phenomenon in NGT. It seems that it occurs in the same way in both sign languages. The word used in the translation of (42) also exists in Dutch: *je*. In all of these examples, there is no clear referent, only an implied referent. This does not only happen with the 2nd person pronoun, but also the 3rd person pronoun, like in spoken languages.

(41) IX2 LIVE ONE TIME
'You only live once.'
(RSL, Kimmelman, 2018, p. 222)

(42) HEARING SCHOOL IX2 SCHOOL PALM.UP IX2 SIGN IX2 HEARING LOOK PALM.UP
'If you signed at a hearing school people would look at you weird.'
(**Als je** op een horende school gaat gebaren, zullen ze raar opkijken.)
(1792-S073-00:16.680)

In our corpus data, only a single instance of the dedicated referentially deficient pronoun SOMEONE was found (43). This is comparable to the RSL example (44). However, other examples were also found in which compounds were used instead, like in (45) with the compound DIFFERENT^PERSON meaning *someone*. This compares to the use of compounds in TID, like in (46). In all four cases, a (complex) sign meaning 'someone' is used, with different realizations of the sign. As we know, this also occurs in spoken languages. In all of these examples, there is no clearly defined referent, only an implied referent.

(43) ...IX2 SOMEONE HELP ACCOMPANY IX2 AT.HOME…
'...for blind people someone to help at home...'
(...voor blinden **iemand** om thuis te helpen...)
(0128-S007-04:13.060)

(44) uncertain
SOMEONE BIKE STEAL
'Someone has stolen my bike.'
(RSL, Kimmelman, 2018, p. 216)

(45) SAME IF DIFFERENT^PERSON
'Same as if someone'
(Net als **iemand**)
(2036-S081-00:29.920)

(46) non-sp
ONE^PERSON^C_PERSON DOORBELL PRESS
'Someone is ringing the door.'
(TID, Kelepir et al., 2018, p. 265)

Some valency-reducing operations were also found in the NGT corpus data. In (47) and (48) forms of role shift are clear when the act of the agent is described. In both examples the subject is demoted to a patient position, while the act of the unnamed agent is described. This compares to (49) from LSC, where the agent is also not stated. Similarly, (50) from Dutch has the same structure, where the subject is the patient of the linguistic event.

(47) bl
GOOD HUG IX_1
'We were hugged.'
(We **werden** omhelsd)
(0049-S006-03:48.200)

(48) rs
IX_2 MUST GO HEARING SOCCER
'We were sent to hearing soccer.'
(We **werden** naar horend voetbal gestuurd.)
(0099-S001-03:09.040)

(49) HOUSE BUY_c ALREADY.
'The house was bought.'
(LSC, Barberà & Cabredo Hofherr, 2015, p. 16)

(50) De belastingen zijn weer verhoogd.
The taxes are again raised
'Taxes have been raised again.'
(Dutch, Breed & Van Olmen, 2021, p. 180)

An interesting further finding from the search term *er zijn*, was the use of averted eye gaze to indicate the referent of the utterance. (51) seems to reveal the use of an averted eye gaze when referring to unspecified referents. The use of IX_3 at the end of the utterance refers to the same locus as the averted eye gaze at the beginning of the utterance. This suggests that the averted eye gaze is used as a tactic in identifying a non-specific, non-present referent. This compares to the TID example (52), where averted eyegaze is also used, suggesting a non-specific, non-present referent. Averted eyegaze seems to also be connected to non-specificity in NGT.

(51) ae
HAVE DIFFERENT SAME HEARING SAME PALM.UP IX_3
'There are different deaf people that are the same as hearing people.'
(**Er zijn** verschillende doven die dezelfde zijn als horenden.)

(52) ae
lmc
bf
3lat-highSEND.LETTER1
'Someone (non-specific, exclusive to our group) sent a letter to me.'
(TID, Kelepir et al., 2018, p. 270)

Furthermore, uses of high and central-low loci were found in unspecific contexts, like in (53) and (54) respectively. This compares to other sign languages as well, like the LSC example in (55), in which the high locus position suggests non-specificity. NGT seems to have the same function of locus, but we have to keep in mind that only a few examples from the corpus support this claim.

(53) IX2high ONLY SAY
'One says'
(**Men** zegt)
(0330-S016-00:03.600)

(54) IX2central-low AMSTERDAM GRONINGEN ROTTERDAM IX2 REGION
'You have Amsterdam, Groningen, Rotterdam.'
(**Je hebt** Amsterdam, Groningen, Rotterdam.)
(1683-S069-00:08.780)

(55) POT FLOWER BREAK-3up.
'They broke the flower pot.'
(LSC, Barberà & Cabredo Hofherr, 2015, p. 16)

5.2 Relation between gloss and translation tier

A noticeable characteristic of many examples found to be relevant on the translation tier was that there was not always a sign indicating the words from the translation. In (56), the deaf annotator decided to use the translation *kan je*, while there is no indication of this in the gloss. A null pronoun is used here, so what is used in the translation is often an interpretation of what has been signed or glossed. A deaf annotator seems to have an intuition that this is what it means, even if it is not signed as such. This happens again in (57), where the deaf annotator's translation contains *iemand* while the sign used is actually IX2. Again, this suggests an intuition that the deaf annotator may have of what the meaning truly is.

(56) hs
DEAF CAN LOOK
'You cannot see deafness.'
(Doof zijn **kan je** niet zien.)
(0294-S017-04:53.750)

(57) CAR.RIDING IX2
'Someone is conducting the tram.'
(**Iemand** bestuurt de tram.)
(0526-S025-01:21.400)

5.3 PALM.UP Occurrences

A salient observation in many results is the use of PALM.UP. Previous research indicates that PALM.UP can be an epistemic marker indicating the absence of knowledge, uncertainty and indefiniteness (Cooperrider, Abner, & Goldin-Meadow, 2018). The PALM.UP is often connected to signs such as WHAT and MAYBE (Cooperrider, Abner, & Goldin-Meadow, 2018). The results of this study support the marking of uncertainty and indefiniteness through the use of PALM.UP. In (58) and (59) you can see the use of PALM.UP in impersonal contexts, which is connected to uncertainty. However, it is important to keep in mind that any conclusions must remain speculative at this point, because PALM-UP is multifunctional.

(58) HEARING SCHOOL IX2 SCHOOL PALM.UP IX2 SIGN IX2 HEARING LOOK PALM.UP
'If you signed at a hearing school, they (the hearing people) would look at you weird.'
(**Als je** op een horende school gaat gebaren, zullen ze raar opkijken.)
(1792-S073-00:16.680)

(59) IX2 PALM.UP WANT NGT IX2 EVERYBODY TRY SAME SIGN LANGUAGE IX2 ALLOWED PALM.VERT PALM.UP
'One wants that NGT, as a language, looks the same, they need to know it for themselves.'
(**Men** wil graag dat NGT er als taal hetzelfde uitziet, dat mag, dat moeten ze zelf weten.)
(1683-S069-00:33.330)

PALM.UP also occurred in conjunction with pointing. The PALM.UP became blended with pointing possibly to indicate a lack of knowledge regarding who the referent of the sentence is. This is displayed in (60) and (61), further pictured in *Figure 8*. These findings indicate that the use of PALM.UP may actually be connected to uncertainty, in this case specifically in regards to the referent of a sentence.

(60) DIFFERENT DIFFERENT.SIDE IX2 SMART LESS LEVEL
'On the other hand, someone with a lower intellectual level.'
(Aan de andere kant, **iemand** met een laag intelligentieniveau)
(0331-S015-01:32.030)

(61) IX2 CI ALSO
'And someone with a CI too'
(En **iemand** met een CI ook)
(1551-S065-03:30.900)

Figure 8. Use of blend: PALM.UP & IX2 in examples (60) and (61) respectively. Modified from Corpus NGT (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood & Ros, 2008)

5.4 Limitations of this study

A limitation of this study was that some possible search terms, such as *wordt*, *worden*, *waren*, *mens*, *mensen*, and *je*, *we*, *ze* had to be excluded due to time constraints. Corpus research contains naturalistic data, which is a benefit. However, unfortunately, as with all corpus studies, there are also some challenges. Parts of the corpus are unannotated, and therefore it is not possible to search for everything. Furthermore it is extremely time consuming to manually search through data for relevant examples. In future research, it would be relevant to include more search terms in the corpus search, to get a more accurate image of agent-backgrounding strategies in NGT, especially because findings suggest there may be further strategies used.

6. Conclusion

In this study we researched the question *How is agent-backgrounding realised in Sign Language of the Netherlands, and how do the available strategies resemble those of other spoken and sign languages?* We looked at agent-backgrounding strategies in NGT, as well as how these strategies relate to those in other sign and spoken languages. We analysed the Corpus NGT for a variety of search terms expected to give results of impersonal uses of personal pronouns, dedicated referentially deficient pronouns, valency-reducing operations.

The corpus data revealed that many of the same strategies exist as in other sign and spoken languages, such as the impersonal uses of personal pronoun *je*, the dedicated referentially deficient pronoun *iemand*, and valency-reducing passive constructions. These are realized through the use of pointing, specialized signs, and null pronouns.

In future research it would be relevant to analyse more search terms, such as *wordt*, *worden*, *waren*, *mens*, *mensen*, and *je*, *we*, *ze*. It would also be relevant to analyse the PALM.UP phenomenon already discussed. Furthermore, research into the use of classifiers is compelling.

This research is highly relevant to the field of sign language linguistics, as agent-backgrounding and impersonalisation strategies have not been researched at all for NGT to date. This fills an important gap in the literature. This study helps gain further understanding of sign languages and their structures, as well as how they compare to each other and spoken languages.

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Appendix A - Glossing Conventions: Standard Abbreviations

Standard glossing conventions dictate that signs are glossed in SMALL CAPS or CAPS. The NGT examples are glossed in English with translations into English and Dutch. INDEX refers to a pointing sign (De Vos & Pfau, 2015, p. 270). The subscript combined with IX refers to different points in the signing space, as detailed below.

IX	index
IX_1	first person
IX_2	second person
IX_3	third person

The use of non-manual markers is glossed above the signs, combined with lines which “indicate the scope” (De Vos & Pfau, 2015, p. 270). The non-manuals which are relevant for the examples are glossed above each example. Below are the following standard abbreviations and what they refer to.

hth	head thrust
non-sp	non-specific
ae	averted eye gaze
lmc	lowered mouth corners
bf	brow furrowing
br	brow raise
bl	body lean
rs	role shift
uncertain	uncertainty marker
hs	headshake