CHAPTER 2

Negative Concord in Sign Language of the Netherlands
A journey through a corpus

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In a Negative Concord (NC) configuration, two negative elements co-occur in a clause but the polarity of that clause still remains negative. NC involving two manual negators has been observed in various sign languages, but relevant examples are usually presented in the context of broader investigations on negation in a particular sign language. Also, examples are not usually drawn from natural discourse. In this chapter, we offer the first comprehensive study on NC in a single sign language, namely, the Sign Language of the Netherlands (NGT), based entirely on corpus data. We find that NC is attested in NGT, but that it is optional and rather infrequent. First, our contribution is of a typological nature, as we distinguish different types of NC and compare our corpus-based results with those reported for other signed and spoken languages. Second, we describe in detail our “journey”, that is, our search procedure and inclusion criteria, thereby offering methodological guidelines for future endeavors.

Keywords: Corpus NGT, cross-modal typology, doubling, negation, Negative Concord, variation

1. Introduction

Before embarking on a journey, especially if it leads to poorly charted territory, it is a good idea to prepare well and to seek advice. One may, for instance, profit from the experiences of others who have undertaken similar journeys – possibly their experiences even sparked one’s curiosity in the first place, and thus triggered the travel plan. In this chapter, we report on a journey through the Corpus NGT, which was indeed motivated by previous investigations. Now, it has to be admitted that the Corpus NGT is not exactly poorly charted territory: others before us have wandered through it and returned with interesting, and sometimes unexpected,
findings – for example, Bank (2014) on mouthings, Klomp (2019) on conditional clauses, and Van Boven (2021) on nominal plurals. However, to date only a few have set foot in the specific area that we are going to explore.

Our journey was inspired by Oomen and Pfau’s (2017) investigation of patterns of clausal negation in Sign Language of the Netherlands (NGT), based on data from the Corpus NGT. They drew two conclusions. Firstly, clausal negation is commonly expressed by means of a negative headshake which accompanies at least the verb but may also spread over adjacent signs. Secondly, the manual negative particle not, when used, may occupy two positions: immediately preceding the VP, or following the VP (which often, but not always, is the clause-final position). Crucially, during their journey, they also came across a few cases of Negative Concord, a syntactic configuration whereby the negative polarity of a clause is retained despite the use of two negative elements (see Section 2 for details). However, they excluded these cases from the discussion, as they were interested in the expression of basic clausal negation. Oomen and Pfau (2017) explored only a small part of the corpus (approx. 2%). Their findings made us suspect that it would be worthwhile to conduct a more targeted study, exploring all annotated clips in the corpus, in order to scrutinize the use and functions of Negative Concord in the language. After all, it is known that Negative Concord is not an uncommon phenomenon cross-linguistically, both in spoken and signed languages.

Thus, our primary goal is to describe and categorize cases of Negative Concord in naturalistic corpus data in NGT, and to place the patterns we attest in a cross-linguistic perspective. Our secondary aim is to provide a thorough descriptive account of our method, in order to facilitate future similar corpus-based sign language studies.

The notion of Negative Concord, which is central to our investigation, will be introduced in Section 2, where we address Negative Concord patterns that have been described for spoken and signed languages. In Section 3, we detail our method, paying special attention to our search procedure and our inclusion criteria. In Section 4, the patterns encountered in the corpus are presented and are complemented by comparative data from other sign languages. In Section 5, we discuss our data from a sociolinguistic and cross-modal perspective. Section 6 concludes our journey.

1. Oomen et al. (2018) put forward a formal account, couched within the framework of Generative Grammar, in order to capture the patterns reported by Oomen and Pfau (2017). This account makes certain predictions regarding Negative Concord, specifically by assuming that the NGT phrase structure contains two negative phrases either of which may host a (manual) marker of negation. However, in the present paper, we are not concerned with a formal account, and we thus leave testing the predictions to future study.
2. Negative Concord

A Negative Concord (NC) construction is characterized by the fact that two (or sometimes more) negative markers co-occur within a clause without cancelling each other out; that is, the presence of two negations does not render the clause affirmative. This contrasts with so-called ‘double negation’, such as Standard English Nobody didn’t laugh, where the presence of two negative elements – in this particular case the neg-word nobody and the cliticized negative particle not – yields an affirmative meaning, namely that everybody laughed, although this is pragmatically marked (Larrivée 2016).

2.1 Types of Negative Concord

NC comes in various types and has been observed in spoken and signed languages. In our presentation of NC, we take a broad perspective by including all cases in which two negative markers participate in the expression of negation, independent of whether these markers can also realize negation by themselves in other contexts, or whether NC is obligatory.

In some languages, expressing standard negation involves NC (Miestamo 2005), that is, the negation of a declarative clause systematically involves the addition of two negative markers, be it two independent negative particles or a particle and an affix. Standard French is such a language. In order to negate the sentence in (1a), the negative markers ne … pas are added, which frame the finite verb (1b) – this is commonly referred to as ‘split negation’. Orthographically, the two negators appear as independent elements (unless ne cliticizes to the verb). Yet, in the Generative tradition, it is commonly assumed that negation, like other functional elements, projects a (negative) phrase; as such, ne is usually analyzed as an affix that attaches to the verb (e.g., Haegeman 1995; Pollock 1989). In colloquial French, the pre-verbal marker ne is commonly dropped.

(1) a. Mon frère parle chinois
   my brother speaks Chinese
   ‘My brother speaks Chinese.’
   b. Mon frère ne parle pas chinois
   my brother NEG speaks NEG Chinese
   ‘My brother does not speak Chinese.’

Another language in which the expression of standard negation generally requires the presence of two negative elements is Afrikaans. Afrikaans is striking in that the two negative particles involved are phonologically identical. As illustrated in (2), the
first *nie* appears clause-medially and follows the subject and the finite verb, while the second *nie* occupies the clause-final position (adapted from Biberauer 2007: 1). Still, as discussed in detail by Biberauer, there are specific syntactic and pragmatic contexts in which the first *nie* is absent.

(2) a. *Ek ken daardie man* [Afrikaans]
    I know that man
    ’I know that man.’
    b. *Ek ken nie daardie man nie*
    I know NEG that man NEG
    ’I don’t know that man.’

Besides languages that display NC in standard negation contexts, there are languages in which NC is only observed in specific contexts involving neg-words, i.e., negative indefinites (e.g., *nobody, nothing*) or negative adverbials (e.g., *never*). In recent studies, this type is considered the prototypical instantiation of NC (e.g., Zeijlstra 2016). In Turkish, for instance, standard negation is expressed by the addition of a verbal suffix, which is subject to vowel harmony and precedes tense and agreement suffixes, as shown in (3).

(3) a. *Kardeş-in-e güven-iyor-um* [Turkish]
    brother-2poss-dat trust-prs-1sg
    ’I trust your brother.’
    b. *Kardeş-in-e güven-mi-yor-um*
    brother-2poss-dat trust-NEG-prs-1sg
    ’I don’t trust your brother.’

However, in clauses including a neg-word, use of the negative suffix is still obligatory. In (4), we illustrate this pattern for the neg-word *kimse* (‘nobody’) in subject (4a) and object (4b) position. In other words: for standard negation, Turkish is not an NC language, as only a single marker is employed, but whenever neg-words are used, it behaves like a so-called ‘strict NC language’, i.e., a language in which neg-words always need to be accompanied by the basic negative morpheme (Giannakidou 2000; Zeijlstra 2004).2

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2. In French and Afrikaans, NC is also observed with neg-words, although the exact contexts and restrictions may differ between the two languages. In French, a neg-word in object position (e.g., *rien* ‘nothing’) or the negative adverbial *jamais* (‘never’) would take the position of *pas*; in Afrikaans, the corresponding elements *niks* (‘nothing’) and *nooit* (‘never’) would take the position of clause-medial *nie*.

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(4) a. Ban-a kimse güven-mi-yor
    I-DAT nobody trust-NEG-PRS
    ‘Nobody trusts me.’

b. Kimse-ye güven-mi-yor-um
    nobody-DAT trust-NEG-PRS-1SG
    ‘I don’t trust anybody.’

Italian is another language in which standard negation is expressed by a single negative marker, the particle non, whereas NC occurs when neg-words are used. In contrast to Turkish, however, NC is not always observed. Specifically, we only find NC when the neg-word follows the particle non, as is true for the neg-word nessuno (‘nobody’) in object position in (5a). In contrast, in (5b), where nessuno occupies the subject position, use of non, yielding an NC reading is ruled out (however, the sentence including non could receive a Double Negation reading ‘Everybody has kissed my brother’). Given that NC is restricted to certain syntactic configurations, Italian can be classified as a so-called ‘non-strict NC language’ (Giannakidou 2000; Zeijlstra 2004).

(5) a. Mio fratello non ha baciato nessuno
    my brother NEG has kissed nobody
    ‘My brother has not kissed anybody.’

b. Nessuno (*non) ha baciato mio fratello
    nobody NEG has kissed my brother
    ‘Nobody has kissed my brother.’

All the instances of NC that we presented so far are obligatory (with the exception of Colloquial French). However, there are also spoken languages in which what looks like NC is optional. For example, in Georgian, standard negation is realized by a particle which always immediately precedes the verb. The examples in (6) illustrate that a neg-word like arapari (‘nothing’) may appear by itself (6a) or may be accompanied by the negative particle ar (6b) (Pfau et al. 2022; ver = marker of version). The type of NC observed in (6b) is common, but, crucially, it is not obligatory. In fact, some authors (e.g., Kuhn 2020) claim that the combination in (6) does not exemplify NC in the narrow sense, as the negative indefinite (the neg-word araperi) does not obligatorily require the presence of a negative licensor within the same clause.

(6) a. chem-ma da-m araper-i i-q’id-a
    my-ERG sister-ERG nothing-NOM VER-buy-3SBJ
    ‘My sister bought nothing.’

b. chem-ma da-m ar i-q’id-a araper-i
    my-ERG sister-ERG NEG VER-buy-3SBJ nothing-NOM
    ‘My sister bought nothing.’
## Negative Concord in sign languages

The expression of negation has been studied for many sign languages around the world, and studies indicate that all sign languages have at their disposal manual negative signs (such as negative particles, neg-words, negative modals) and non-manual markers of negation – most commonly a headshake (see Gökgöz 2021; Quer 2012). Given the two types of negation markers, two broad types of NC are in principle possible and have, in fact, been reported in the literature: (i) NC involving a manual and a non-manual marker; (ii) NC involving two manual negators.

Before discussing these two types, we introduce a basic typological distinction regarding negation systems in sign languages: the distinction between non-manual dominant and manual dominant sign languages, first described in Zeshan (2004). In a non-manual dominant sign language, clauses are commonly negated by means of only a non-manual marker; manual clause negators exist, but their use is optional. We illustrate this type for German Sign Language (DGS) in Example (7). The fact that in (7a), the headshake (‘hs’) alone negates the proposition provides evidence that this non-manual indeed carries negative force; it can thus be considered an independent marker of negation. This means that the co-occurrence of the headshake with a manual negator, as in Example (7b), is an instance of NC, comparable to French-type split negation (Pfau 2001, 2002). In DGS, the headshake accompanies at least the verb, but may optionally spread over other parts of the clause, e.g., the direct object wine in (7), as indicated by the brackets.

\[
(7) \quad \text{a. } \text{POSS}_1 \text{ BROTHER WINE LIKE} \quad \text{hs} \\
\quad \text{‘My brother doesn’t like wine.’} \\
\quad \text{b. } \text{POSS}_1 \text{ BROTHER WINE LIKE NOT} \quad \text{hs} \\
\quad \text{‘My brother doesn’t like wine.’}
\]

Manual dominant sign languages also employ non-manual markers of negation. However, in contrast to non-manual dominant sign languages, a manual negator is always required in the expression of negation. In other words, the non-manual does not carry negative force. Rather, it has been argued that for some sign languages belonging to this group, the non-manual marker is lexically specified, that is, it is part of the phonological make-up of the manual negator (e.g., Geraci 2006 for Italian Sign Language (LIS); Tang 2006 for Hong Kong Sign Language; Schuit 2013 for Inuit Sign Language). This also explains why the non-manual does not usually spread beyond the manual negator in these sign languages.

It is worth pointing out that recent research suggests that the two-way distinction presented here is not sufficient to capture all negation systems attested across sign languages. Rather, hybrid systems also exist. Russian Sign Language (RSL), for instance, has been classified as a manual dominant sign language, but still the
headshake is capable of spreading (Rudnev & Kuznetsova 2021). Kata Kolok, a village sign language of Bali, allows for both manual-only and non-manual-only negation, indicating that neither of the two types of markers is obligatory in this language (Lutzenberger et al. 2022). Finally, in a corpus-based study involving a large number of negative clauses, Johnston (2018) argues that in Australian Sign Language (Auslan), the headshake is neither a lexical nor a grammatical marker, but rather a gestural element and thus functionally equivalent to headshakes used as co-speech gestures in spoken language discourse (e.g., Kendon 2002; Harrison 2014).

Returning to the two broad types of NC described above, it is evident that NC involving a manual and a nonmanual marker of negation, as in (7b), can only be attested in nonmanual dominant sign languages. For the remainder of this chapter, we will not be concerned with this type of NC, as it has previously been demonstrated that NGT, just like DGS, allows for this type of NC. Rather, we will focus on NC involving two manual negators, which has been observed to occur in both manual dominant and non-manual dominant sign languages. In (8), we provide two examples. The first is from Georgian Sign Language (GESL) (Pfau et al. 2022), which is claimed to be manual dominant: the neg-word nothing precedes the verb while the clause negator neg-1 follows it (see Pfau et al. 2022 for other types of NC in GESL). The Catalan Sign Language (LSC) example in (8b), adapted from Pfau and Quer (2007: 135), also exemplifies the combination of the basic clause negator with a neg-word, in this case, the negative adverbial never. However, LSC has been classified as a non-manual dominant sign language, and in addition, the positions of the two manual negators vis-à-vis the verb and vis-à-vis each other differ from those in GESL.

(8) a. YESTERDAY INDEX₁ NOTHING BUY NEG-1 [GESL]
   ‘Yesterday I didn’t buy anything.’

b. INDEX₁ SMOKE NOT NEVER [LSC]
   ‘I have never smoked.’

Still, NC is not obligatory in either of the two sign languages, and it has not been determined whether NC serves a specific pragmatic function. Hence, both GESL and LSC behave similarly to Georgian in this respect, cf. (6). Moreover, for some sign languages, both manual dominant (e.g., LIS; Geraci 2006) and non-manual dominant ones (e.g., DGS; Pfau 2016), it has been explicitly claimed that they do not allow NC involving two manual negators of whatever type.

The only sign language for which NC of the type that we focus on has been claimed to be obligatory in certain configurations is RSL. Kuhn and Pasalskaya (2019) show that negative indefinites in RSL that appear in-situ must be licensed
by another manual negative element; that is, Examples (9a) and (9b) (adapted from Kuhn 2020: e329) would be ungrammatical without the clause-final negator NOT. Crucially, in the configuration in (9c), from Kuhn and Pasalskaya (2019: n.p.), where the neg-word NOBODY appears clause-finally (i.e., ex-situ), the presence of NOT leads to ungrammaticality. In other words, RSL behaves like Italian in this respect and can thus be classified as a Non-strict NC language.

(9)  
\begin{align*}  
a. \text{NOBODY} & \quad 3\text{CALL} \quad \text{NOT} \\
& \quad \text{‘Nobody called me.’} \\
\text{[RSL]} \\
\hline 
\end{align*}

\begin{align*}  
b. \text{INDEX} & \quad \text{NOTHING} \quad \text{BUY} \quad \text{NOT} \\
& \quad \text{‘I bought nothing.’} \\
\hline 
\end{align*}

\begin{align*}  
c. & \quad 3\text{CALL} \quad (\text{NOT}) \quad \text{NOBODY} \\
& \quad \text{‘Nobody called me.’} \\
\hline 
\end{align*}

Further examples of different types of NC are presented in Section 4, where we discuss data extracted from the Corpus NGT from a cross-linguistic perspective. But first, we explain our method, that is, how we prepared for and carried out our journey toward uncovering the use and functions of NC in NGT.

3. Method: A journey through corpus data

This study is based on the analysis of (semi-)spontaneous corpus data. In this section, we present a comprehensive account of the steps we took in collecting, annotating, and then analyzing our data. We hope that this rather detailed description of our journey, and the challenges we encountered along the way, will be of value to readers who are doing or are planning to do corpus-based research on sign languages, or simply to anyone interested in the processes involved in such research.

3.1 Corpus NGT

We collected our data from the Corpus NGT (Crasborn et al. 2008; Crasborn & Zwitserlood 2008). This corpus contains recordings of 92 deaf native NGT signers (ages 17–84 years), which amount to over 70 hours of data. The corpus includes semi-spontaneous monologues and dialogues; e.g., signers were asked to retell video clips (narratives), to tell stories about their own experiences, and/or to discuss issues related to deafness. They also spontaneously discussed topics of their own choice.3

Part of the video data has been annotated by fluent NGT signers, using the annotation tool ELAN (Crasborn & Sloetjes 2008): there are ID-gloss annotations, as well as Dutch sentence-level translations. For some files, mouthings have also been annotated. The third release of the Corpus NGT – the one we used for our analyses – contains 199,293 annotations. Of importance for our study are the ID-glosses, that is, Dutch words used as labels for the signs. There are separate tiers for each signer and for each hand – that is, there are four gloss tiers for each video: the left hand of signer 1, the right hand of signer 1, the left hand of signer 2, and the right hand of signer 2; two-handed signs are annotated on the tiers of both hands. The annotations follow the duration of involvement of each hand (Crasborn et al. 2020).

In total, there are about 48,000 annotations on the left hand gloss tiers, and about 97,000 on the right hand gloss tiers. Figure 1 illustrates the videos, ID-glosses, and our added annotations in ELAN (see Section 3.4 for details). The represented example occurs in corpus file 005 at 02:01.58.

Figure 1. Screenshot of the gloss tiers and our Negative Concord and Comments tiers in the Corpus NGT

See <https://www.ru.nl/corpusngtuk/methodology/annotation/> for information about the annotation procedure. Note that ‘annotated’ implies that ID-glosses for signs are provided, but not necessarily also translations.
3.2 Searching for potential instances of Negative Concord

Since we were looking for cases with two manual negative elements within a single clause, the first step was to search on the gloss tiers for two (or more) glosses of manual negative signs – be it basic clause negators, neg-words, or negative modals – occurring in relatively close proximity to one another. For this, we set a maximum of five glosses intervening between the two negative signs on the same tier. Here, we reasoned that the majority of clauses would not contain more than seven manual signs. Increasing the number of intervening signs would have resulted in a considerable increase in the number of hits, against an expected return of only a handful of genuine NC examples.

Given that search strings are limited to a single tier, there is one potential type of NC that could not be captured by our search procedure, namely cases in which two negative signs are articulated by different hands and thus do not appear on the same tier. It is not unusual for signers to switch dominant hand in spontaneous discourse (Frishberg 1985), such that it is possible – although probably uncommon – for two negative signs to be articulated by different hands within a single clause.

We chose not to perform searches on the translation tiers because Dutch is not an NC language, and therefore potential cases of NC in NGT are not expected to be translated into Dutch using an NC structure. In addition, many files in our data set include annotations on the gloss tiers, but not on the translation tier. It was therefore clear that searching on the gloss tiers would yield a more complete data set.5

Using the search function in ELAN, we looked for the gloss combinations shown in Table 1. For each combination, we searched in both directions; for example, not + never means that we searched for both not...never and never...not. For some meanings, different variants exist, which are distinguished in the ID-glosses by means of an appended letter; for example, for niet (‘not’), there are three variants: niet-a, niet-b and niet-c. Figure 2a shows the most common form, niet-a, which is articulated with a 1-hand moving sideward.6 In the tables and glossed examples to follow, we do not distinguish variants with letter codes; however, all variants of each sign were automatically included in our search.

Note that signs that receive different ID-glosses may actually share the same manual form; however, the meaning can generally be distinguished based on the surrounding context and/or the accompanying mouthing (Klomp 2021). One

5. It may well be that we missed examples in files that do not contain any ID-glosses. However, manually searching through the entire corpus is not feasible due to time constraints. Therefore, data files without any annotations on the gloss tiers were not included in the study.

6. When searching on the gloss tiers in the corpus, niet-a yields 529 hits, against 262 hits for niet-b, and 208 hits for niet-c.
example is the sign shown in Figure 2b: a two-handed sign where both hands have a B-handshape, and the dominant hand contacts the non-dominant hand while moving sideward. Potential meanings of this sign include ‘not’ (glossed as niet-c in the corpus), ‘never’ (glossed as nooit-a in the corpus), and ‘nobody’ (glossed as niemand-a in the corpus). Klomp et al. (forthcoming) subsume all these meanings under the gloss neg.ind1 (negative indefinite), but we will stick to glossing the form in Figure 2b according to its meaning in context, as in the corpus annotations. Moreover, the search results for not automatically also included the negative completive marker not.yet (Dutch gloss nog-niet), as well as all negative modals, as not (niet) is part of their ID-gloss (e.g., the negative modal need.not, illustrated in Figure 2c, is glossed in the corpus as hoeft-niet).

Table 1. Gloss combinations searched for in the Corpus NGT, with a maximum of five intervening glosses, and number of hits per combination

<table>
<thead>
<tr>
<th>Gloss combination</th>
<th>Dutch glosses</th>
<th>English translation</th>
<th>Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>niet + niet</td>
<td>not + not</td>
<td>305</td>
<td></td>
</tr>
<tr>
<td>niet + nooit</td>
<td>not + never</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>niet + niemand</td>
<td>not + nobody</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>niemand + niemand</td>
<td>nobody + nobody</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>niet + niet + nooit</td>
<td>nobody + never</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>nooit + nooit</td>
<td>never + never</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>niks + niks</td>
<td>nothing + nothing</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>niks + niemand</td>
<td>nothing + nobody</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>510</td>
</tr>
</tbody>
</table>

Figure 2. Examples of negative signs in NGT: (a) the most common form of not in the Corpus NGT (niet-a); (b) negative sign that can take on several meanings (e.g., ‘not’, ‘never’, ‘nobody’) depending on context and mouthing; (c) the negative modal need.not, a suppletive form (Klomp 2021: 222)
3.3 Estimating the frequency of Negative Concord

Our search provided us with a total of 510 potential examples of NC (Table 1). In order to interpret this result in the broader context of the entire corpus, we were interested in the total number of negated sentences in the data set. Because of the way the Corpus NGT is organized, it is difficult to come to an accurate estimation of the number of clauses containing negation – negation is not separately annotated, and therefore one cannot simply search for negative sentences. We first searched for negated sentences with (at least) one manual negator, neg-word, and/or negative modal in a similar fashion as we did for NC, looking for separate glosses rather than gloss combinations. The quantitative results are shown in Table 2.

Table 2. Number of search hits for glosses niet, nooit, niemand, niks on the gloss tier in the Corpus NGT

<table>
<thead>
<tr>
<th>Gloss</th>
<th>Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>niet (‘not’)</td>
<td>1,520a</td>
</tr>
<tr>
<td>nooit (‘never’)</td>
<td>343</td>
</tr>
<tr>
<td>niemand (‘nobody’)</td>
<td>22</td>
</tr>
<tr>
<td>niks (‘nothing’)</td>
<td>257</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,142</strong></td>
</tr>
</tbody>
</table>

a. This number includes 999 instances of the three variants of niet and 521 cases of negative modals, the negative completive marker not.yet, as well as some idiomatic expressions.

Second, we searched for negative expressions on the translation tier. As mentioned above, negation by means of a headshake only is the most common strategy of basic clause negation in NGT (Oomen & Pfau 2017). However, negative clauses involving headshake only cannot be searched for directly, as headshake is not annotated. In an attempt to obtain an approximation of the total number of constructions involving negation, we therefore performed an extended search on the translation tiers, as NGT sentences negated by only headshake can be expected to be translated by Dutch sentences that include negative words such as niet (‘not’) and niks (‘nothing’). As can be observed in Table 3, this search procedure resulted in a total of 2,541 hits. Note here that, since many files in the data set do not include any translation annotations but do include ID-glosses for manual signs, the numbers presented in Table 3 represent an underestimation.

Third, we estimated the total number of constructions with standard negation in the data set (i.e., excluding other types of negation, like those involving neg-words or negative modals) by extrapolating from Oomen and Pfau (2017). They report that 58.3% of the examples with standard negation in their data – a subset of the Corpus NGT – include a headshake only, while 41.7% also include a manual negator (or involve NC). With a total of 999 hits for the glosses niet-a, niet-b, and niet-c combined (see Table 2), the total estimated number of constructions...
involving standard negation is then about 2,400. When we add to this number the remaining 521 hits including the string niet (e.g., negative modals, or the idiomatic expression maakt-niet-uit ‘doesn’t matter’), and the number of hits for nooit (‘never’), niemand (‘nobody’), and niks (‘nothing’), we arrive at roughly 3,500 constructions involving some form of negation.

Thus, our estimates suggest that the Corpus NGT includes over 2,100 and up to 3,500 negative constructions, while we identified at most 510 cases of NC. Although there are limitations to each of the approaches above, and the results therefore only provide us with a rough estimate, they nonetheless clearly indicate that the majority of sentences with negation do not involve NC in NGT. The next step was to identify which of the 510 search hits that potentially do involve NC could actually be analyzed as NC.

### 3.4 Filtering out irrelevant examples

To identify the sentences with NC, we went through several annotation rounds. For the first annotation round, three authors annotated roughly one third of the 510 original hits. For each dialogue containing potential examples, two new tiers were created. Annotations on the tier ‘Negative Concord’ had one of two possible values: ‘NC’ if the example was a possible NC case, or ‘*’ if it was definitely not. In other words, unclear or uncertain cases were initially annotated as ‘NC’ by default. Comments were indicated on the ‘Comments’ tier.

During this first annotation round, it became clear that many search hits could automatically be excluded, as a consequence of the way the Corpus NGT is

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7. Note here that each potential NC hit involves combinations of two manual negative signs, whereas, for example, Table 2 represents the frequencies of individual manual negative signs in the corpus data. Even so, the total number of potential NC cases adds up to less than half of the 2,142 total hits listed in Table 2, which is also our lowest estimate of the frequency of negative constructions in the corpus data.
organized. Given that the corpus contains separate annotation tiers for the right and left hand of each signer, two-handed signs showed up twice in our search hits: once on the left-hand tier, and once on the right-hand tier. After excluding 190 such double occurrences, 320 hits with the potential of being examples of NC remained in our data set.

In a second annotation round, we examined each of these cases individually in order to determine whether they were genuine NC cases. A number of considerations came into play in this categorization process. First, many examples involved negative elements in two different sentences or clauses – a possibility that our search method did not preclude. Often, it was entirely obvious that this was the case, for instance because the clauses included different arguments and/or predicates, or because a significant prosodic break or even a complete sentence intervened between the two clauses. Hits that included the sign glossed as maakt-niet-uit (‘doesn’t matter’) also fall into this category, since this sign is an idiomatic expression that can function as a clause on its own, with the possible addition of a modifier, as in (10).

\[(10) \text{DOESN’T.MATTER / ACTUALLY DOESN’T.MATTER} \]
\[\text{‘It doesn’t matter, actually.’} \quad \text{[174-S010-02:22.10]}\]

However, there were some obscure cases for which it was less evident where one clause ended and another began. Establishing clause boundaries in sign language data – especially corpus data – is a notoriously tricky task (e.g., Crasborn 2007; Loos 2018; Sandler 2010), and indeed clause boundaries are not annotated in the Corpus NGT. In fact, multiple sentences are regularly included in a single annotation on the translation tiers (Crasborn et al. 2020). For these cases, we determined on a case-by-case basis whether the relevant hits consisted of one or two clauses. Example (11) shows a hit for which the negators are, in fact, in two separate clauses. The clause boundary after the end of the first clause is marked by the palm.up sign, as well as a change in the intensity of the headshake: the intensity tapers off toward the end of the first clause, and then picks up force again at the beginning of the second. The example thus illustrates the two primary cues we relied on when establishing clause boundaries in the fuzzier cases: the use of palm.up (Crasborn et al. 2012), and a change or break in non-manual markers (Sandler 2012).

\[(11) \text{HEAR NOTHING INDEX} \textsubscript{2} \text{PALM.UP / NOTHING PALM.UP} \]
\[\text{‘You can’t hear anything. Anything at all.’} \quad \text{[715-S033-00:37.00]}\]
In the absence of such cues, examples involving a single predicate (which may have been doubled) were considered to form a single clausal unit. This means that examples involving doubling of signs (other than or in addition to doubled negative items) were included in our data set. These mostly involved (sentence-final) pronoun copies (Bos 1995; Crasborn et al. 2012), as in (12a), but also some instances of predicate doubling (12b).

(12) a. \texttt{INDEX\_1 NOT MEAN INDEX\_1 NOT}  \hfill [435-S021-01:33.28]
\texttt{I don't mean (that).}'

b. \texttt{INDEX\_1 PAST NEVER SIGN IX\_up E-M SIGN NEVER PALM\_up}  \hfill [724-S033-00:13.04]
\texttt{I never used to sign e-mail like that.}'

Second, there were a handful of cases for which we suspected that the first of the two negative elements in fact constituted a false start. In Example (13), the first instance of \texttt{NOT} is incomplete in its articulation: the sign’s sideward movement appears slightly shortened, and the handshape is relatively lax, as if not fully formed. Obviously, in corpus data, it is difficult to determine whether an element constitutes a false start or not. We decided to exclude such unclear cases from our data set.

(13) \texttt{NOT INDEX\_1 NOT UNDERSTAND INDEX\_1}  \hfill [044-S003-03:19.32]
\texttt{I don't understand (it).}' (in the sense of 'I don't have the expertise.')

After this categorization process, 75 examples remained, but these still included some unclear or doubtful cases. In a final annotation round, these examples were cross-checked by two of the other authors using a 'traffic light model': cases judged as being genuine NC examples were marked green in a separate Excel-file, cases judged as not involving NC were marked red, and cases that remained unclear were marked orange. Double green examples were subsequently categorized as NC constructions, double red combinations were excluded, and all other combinations were resolved through discussion (in fact, all but one of the orange cases were eventually excluded).

This procedure left us with a data set of 43 instances that could be classified with reasonable certainty as genuine cases of NC. Taking the 510 hits from Table 1 as a basis, this means that only 8.4\% of them indeed involved NC. We pursued our exploration of NC in the corpus with just these examples, and looked into the specific combinations of glosses that yielded these instances. Table 4 provides an overview of the combinations we searched for, the initial number of hits (right column), and how many of those were ultimately identified as cases of NC (center column).
Table 4. Instances of NC per gloss combination
(Shaded cells are instances of ‘doubling’; see Section 4.3)

<table>
<thead>
<tr>
<th>Gloss combination</th>
<th>NC</th>
<th>Total number of hits (see Table 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT + NOT</td>
<td>10a</td>
<td></td>
</tr>
<tr>
<td>NEG MODAL + NOT</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>NOT.YET + NOT.YET</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>NEED.NOT + NEED.NOT</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NOT.YET + NEVER</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>NOT + NEVER</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>NOT + NOBODY</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NOT + NOTHING</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NOBODY + NOBODY</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NOBODY + NEVER</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NEVER + NEVER</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NOTHING + NOTHING</td>
<td>4a</td>
<td></td>
</tr>
<tr>
<td>NOTHING + NOBODY</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NEVER + NOTHING</td>
<td>1b</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>510</strong></td>
</tr>
</tbody>
</table>

a. One instance included different variants of the negative sign NOT, and two instances included different variants of the sign NOTHING.
b. We did not search for NEVER + NOTHING, but the combination showed up in our data coincidentally, through another search.

4. Back from the journey: Patterns of Negative Concord in NGT

Having described our journey through the corpus, we now report our typological findings regarding the different patterns of NC that we found in the corpus data. We distinguish three types of NC: NC involving the basic clause negator not and a neg-word (Section 4.1), NC involving negative modals (Section 4.2), and a special type of NC that we refer to as ‘doubling’ (Section 4.3). In all three sections, we first present representative NGT examples, before offering a cross-linguistic perspective by comparing our data to findings previously reported for other sign languages. In our discussion of typological patterns, we abstract away from potentially relevant sociolinguistic factors – these are addressed in Section 5.2.

10. Our dataset includes two examples that do not fall within any of these three categories: one in which the two neg-words NEVER and NOTHING are combined within a clause, and one in which the neg-word NEVER co-occurs with the negative completive marker NOT.YET (see Table 4). We present the first of these in (i), and in (ii), we provide a similar example from American Sign Language (ASL) (see also Wood 1999: 62).

(i) **grow.up INDEX1 speak never voice nothing** 131-S007-01:23.24
‘When I grew up, I never used my voice.’

(ii) **index1 never see nothing** 194
‘I never saw anything.’

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4.1 NC involving basic clause negator and neg-word

NC involving (a variant of) the basic clause negator *not* and a neg-word is generally considered the prototypical type of NC. That is, studies on NC in spoken languages (e.g., Giannakidou 2000, 2006; Zeijlstra 2016) usually address the structural conditions and limitations on this type of NC; see Examples (4)–(6). Similarly, the handful of studies on sign languages for the most part focus on this combination of negative markers – see Examples (8) and (9).

4.1.1 Corpus examples

Our data set includes ten examples in which the basic clause negator *not* co-occurs with a neg-word, which is either *never* (*n* = 7) or *nothing* (*n* = 3). For *not+never*, the subject usually precedes the first negator (14a). In most cases, some material intervenes between *not* and *never* (14ab), but there are two instances in which the two negators appear adjacent to each other (14c). As for the order of the two negators, *never* may precede (14ab) or follow (14c) *not.11*

(14)

<table>
<thead>
<tr>
<th>Example</th>
<th>Text</th>
<th>Time Stamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>INDEX₁ BETTER NEVER CI NOT</td>
<td>[295-S018-05:24.20]</td>
</tr>
<tr>
<td></td>
<td>‘I don’t want a CI.’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>INDEX₁ NEVER VOICE TALK WE.TWO HANDICAPPED NOT</td>
<td>[006-S003-03:47.68]</td>
</tr>
<tr>
<td></td>
<td>‘We never talked about handicapped people.’</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>EXAMINE YES NOT NEVER PREGNANT</td>
<td>[297-S018-00:08.72]</td>
</tr>
<tr>
<td></td>
<td>‘(…) who have it examined whether or not they should get pregnant.’</td>
<td></td>
</tr>
</tbody>
</table>

One of the three examples involving *not+nothing* is given in (15). In this and another example, *not* precedes *nothing*, and manual material intervenes between the two negative signs; in the third, *nothing* immediately precedes *not*. In six of the ten examples addressed in this section, *not* precedes the neg-word.

(15) DUTCH SPEAK LANGUAGE ALSO NOT STANDARD NOTHING PALM.UP | [066-S006-00:18.76] |
| ‘Dutch people also don’t speak all in the same way.’      |                    |

4.1.2 Comparative perspective

The *not+never* combination that was most common in our data set has also been described for other sign languages. In (8b), repeated here as (16a), we already presented an example from LSC; in (16b), we add a similar ASL example. In both cases, the basic clause negator appears in the position it would usually occupy in standard negation – following the VP in LSC, between subject and verb in ASL – while *never*

11. Five of the seven examples including *not+never* come from the same signer (see Section 5.2).
appears clause-finally.\footnote{Wood states that the sentence in (16b) becomes ungrammatical if the two negative elements appear adjacent to each other, irrespective of their order or whether they precede or follow the VP, e.g., *john not never eat fish (Wood 1999: 28).} For LSC, this results in the two negative signs appearing next to each other.

\begin{itemize}
  \item \begin{itemize}
    \item \textit{Index} \_ \begin{tabular}{l}
          \textbf{Smoke} \hfill \textbf{Not} \hfill \textbf{Never}
        \\
        \begin{tabular}{l}
          \textit{hs}
        \\
        \end{tabular}
    \end{tabular} \hfill \textit{[LSC, Pfau & Quer 2007: 135]}
    \item \textit{I have never smoked.’}
  \end{itemize}
  \item \begin{itemize}
    \item \textit{John} \_ \begin{tabular}{l}
          \textbf{Not} \hfill \textbf{Learn} \hfill \textbf{ASL} \hfill \textbf{Never}
        \\
        \begin{tabular}{l}
          \textit{[ASL, Wood 1999: 62]}
        \\
        \end{tabular}
    \end{tabular}
    \item \textit{‘John will not ever learn ASL.’}
  \end{itemize}
\end{itemize}

The \textsc{not}+\textsc{nothing} combination has previously been illustrated by the GESL example in (8a) and the RSL example in (9b); the latter is repeated here as (17a). As mentioned in Section 2.2, RSL is unique, as it behaves like a Non-strict NC language, that is, NC is claimed to be obligatory in such contexts. Moreover, the same combination has been reported for Flemish Sign Language (VGT), see (17b). For this latter example, the authors claim that this “special use of \textsc{nothing}” contributes emphatic meaning (note that they gloss the headshake as ‘neg’).

\begin{itemize}
  \item \begin{itemize}
    \item \textit{Index} \_ \begin{tabular}{l}
          \textbf{Nothing} \hfill \textbf{Buy} \hfill \textbf{Not}
        \\
        \begin{tabular}{l}
          \textit{[RSL, adapted from Kuhn 2020: e329]}
        \\
        \end{tabular}
    \end{tabular}
    \item \textit{I bought nothing.’}
  \end{itemize}
  \item \begin{itemize}
    \item \textit{How-Many Times} \_ \textbf{Not} \_ \textbf{Say} \_ \textbf{Nothing}
    \begin{tabular}{l}
          \textit{[VGT, Van Herreweghe & Vermeerbergen 2006: 248]}
    \\
    \end{tabular}
    \item \textit{‘They did not tell me how many times!’}
  \end{itemize}
\end{itemize}

Finally, there is the noteworthy case of Turkish Sign Language (TİD). Zeshan (2006) reports examples in which the neg-word glossed as \textsc{none}(2) in subject position combines with one of the basic clause negators: \textsc{no-no} (18a) or cliticized \textsc{not} (18b). TİD is a manual dominant sign language, in which the non-manual marker usually accompanies only the negative particle. However, as is evident from the examples in (18), in NC contexts, the non-manual extends over the entire clause. Further note that TİD employs two non-manuals, a headshake and a backward head tilt, which are synchronized with the movement of the negative sign: the signs \textsc{none}(2) and \textsc{no-no} are accompanied by headshake, while \textsc{not} is coarticulated with a backward head tilt. In (18b), the headshake associated with \textsc{none}(2) “overrides” the head tilt specified for \textsc{not}.

\begin{itemize}
  \item \begin{itemize}
    \item \textit{Index} \_ \begin{tabular}{l}
          \textbf{None} \hfill \underline{\begin{tabular}{c}
          \textbf{(2)}
        \\
        \end{tabular}} \hfill \textbf{Appear} \hfill \textbf{No-No}
        \\
        \begin{tabular}{l}
          \textit{hs}
        \\
        \end{tabular}
    \end{tabular} \hfill \textit{[TİD, Zeshan 2006: 158]}
    \item \textit{‘No-one appeared.’}
  \end{itemize}
  \item \begin{itemize}
    \item \textit{Index} \_ \begin{tabular}{l}
          \textbf{None} \hfill \underline{\begin{tabular}{c}
          \textbf{(2)}
        \\
        \end{tabular}} \hfill \textbf{Go}^\wedge \hfill \textbf{Not}
        \\
        \begin{tabular}{l}
          \textit{hs}
        \\
        \end{tabular}
    \end{tabular} \hfill \textit{[TİD, Zeshan 2006: 159]}
    \item \textit{‘No-one went (there).’}
  \end{itemize}
\end{itemize}
4.2 NC involving negative modals

An interesting phenomenon reported for many sign languages is the use of specialized forms of modal verbs in negative contexts, resulting either from the cliticization of the basic clause negator or from (partial) suppletion. Usually, such negative modals do not combine with the basic clause negator (see Shaffer 2002 for ASL; Pfau & Quer 2007 for DGS and LSC; Makharoblidze & Pfau 2018 for GESL; Quer 2012 and Zeshan 2004 for overviews).

4.2.1 Corpus examples

Our data set includes eight examples in which a negative modal participates in an NC construction involving another manual negator. In all eight cases, the other manual negator is a variant of the basic negative marker not. Most often ($n = 4$), this type of NC involves the suppletive form need.not (see Figure 2c). Strikingly, when need.not and not combine, they are always adjacent, and need.not always precedes not (19a). In one case, not occurs twice, but the sentence still ends with the sequence need.not not (19b).

(19) a. **but need.not not learn** [065-S006-01:22.44]
   'But you don’t have to learn (it).'
   b. **better abortion ready** hs
      **index3a child not suffer need.not not**
      'It’s better to have an abortion such that the child doesn’t have to suffer.' [132-S008-02:49.68]

The other two negative modals we find to combine with not are want.not ($n = 2$) and cannot ($n = 2$), as exemplified in (20ab). For both, we observe that material may intervene between the negative modal and not (20a), and that the modal may either follow or precede not.

(20) a. **want.not index1 rather not** [007-S004-03:27.96]
   'I don’t want (a CI).'</n   b. **indexup index1 think cannot not** [618-S030-00:03.60]
   'I think it [standardization] is not possible.'

Based on these examples, we tentatively conclude that there is something special about the combination of need.not and not, given the stricter order and the apparent adjacency requirement. It might be the case that we are dealing with a type of cross-modal borrowing. Dutch also employs a special verb in similar contexts, the verb hoeven, which is a Negative Polarity Item (NPI). In contrast to NGT, this verb always combines with an NPI-licensor such as the basic clause negator niet or
a neg-word. It is possible that some signers occasionally use need.not in the same way as hoeven, i.e., as an NPI that needs to be licensed by another negative element, and thus combine it with not.

4.2.2 Comparative perspective

We did not come across examples in the literature that would be fully comparable to the patterns we have described above. However, in some sign languages, the use of specialized negative forms extends to certain cognitive predicates like know (Makharoblidze & Pfau 2018; Zeshan 2004). For instance, Auslan features the negative verb believe-not, and Johnston (2018: 197) reports Example (21) from the Auslan Corpus (‘re’ = raised eyebrows), in which this verb combines with the clause negator not. If we assume that the verb believe expresses epistemic meaning, then (21) is actually similar to the NGT examples above.

\[21\] re lazy, index 1 not believe-not

‘I certainly don’t believe they are lazy.’

For ASL, Fischer (2006: 194) provides Example (22), in which the negative modal can’t combines with the negative quantifier none. As pointed out in the previous section, we did not come across comparable cases in the Corpus NGT.

\[22\] dark, can’t see none people

‘It was so dark that I couldn’t see anybody.’

Regarding NC involving negative modals, GESL presents us with a typologically unique case. We illustrate the pattern for the negative modal cannot, but it extends to other negative modals and the negative verb know.not (Makharoblidze & Pfau 2018). As noted in Section 2.2, GESL allows for NC involving a basic clause negator and a neg-word. The combination of a negative modal with a negative marker, however, is ungrammatical (23a). Strikingly, in past tense contexts, the ban on this type of NC is lifted. As is evident from the contrast between (23b) and (23c), in such contexts, NC is even obligatory. In other words, we observe tense-specific NC, which applies only to modal verbs – a pattern that is also highly unusual from a cross-modal typological perspective.

\[23\] a. *index 3 dinner cannot-1 prepare neg-1

‘She/he cannot prepare the dinner.’

b. last night index 1 cannot-1 sleep neg-1

‘Last night I couldn’t sleep.’

c. *last night index 1 cannot-1 sleep

‘Last night I couldn’t sleep.’
4.3 Doubling

Doubling is a special case of NC, whereby two phonologically identical negative markers appear within a clause. As illustrated in (2), standard negation in Afrikaans involves NC of the doubling type, as the negative marker nie appears twice in (most) negative clauses. Doubling has previously been described for some sign languages (see, e.g., Zeshan 2004), and has been related to a specific pragmatic meaning.

4.3.1 Corpus examples

Our data set includes 20 instances of doubling (see shaded cells in Table 4).\(^{13}\) The most common case is doubling of not (\(n = 9\)). In all instances, one or two signs intervene between the two negators, and in eight instances, one of the intervening signs is the predicate (24a), which may also be non-verbal. The only exception is Example (24b), where the verb precedes the first not. The subject, if present, always precedes the first not, but in one example, it is doubled and also appears in between the two occurrences of not (24c).

\[(24)\]

a. \(\text{INDEX}_{3a} \text{NOT GET.UP NOT}\)

\(\text{hs}\)

\[047-S005-00:38.84\]

‘He didn’t get up.’

b. \(\text{HAVE ALSO NOT MORE NOT SIGN FOR}\)

\(\text{hs}\)

\[822-S036-00:41.36\]

‘Then we don’t have a sign for it yet.’

c. \(\text{INDEX}_1 \text{NOT MEAN INDEX}_1 \text{NOT}\)

\(\text{hs}\)

\[435-S021-01:33.28\]

‘I don’t mean (that).’

Doubling of never is also attested (\(n = 4\)). With respect to the position of the subject, we observe the same pattern as in sentences with doubling of not. The main verb always occupies a position between the two instances of never, as in (25).

\[(25)\]

\(\text{NEVER EXPERIENCE INDEX}_1 \text{NEVER INDEX}_1\)

\(\text{hs}\)

\[005-S003-02:01.60\]

‘I never experienced that.’

Doubling of the negative completive marker not.yet (\(n = 2\)), as in (26a), and of nothing (\(n = 2\)), as in (26b), also occurs, albeit less frequently. In all four cases, one or two signs intervene between the two negative signs.

\[(26)\]

a. \(\text{TURN.OUT NOT.YET EGG NOT.YET}\)

\(\text{hs}\)

\[154-S008-01:09.88\]

‘It turned out that there was no egg yet.’

---

\(^{13}\) The numbers in the shaded cells in Table 4 actually add up to 23, but for not+not and nothing+nothing, there are three examples that are not true instances of doubling since the two negators are different lexical variants.
Finally, for negative modals, we observe only doubling of need.not ($n = 3$). In all three examples, need.not appears at the beginning and end of the clause, but before palm.up, if present, as in (27). Since none of the three examples included an overt subject, we could not determine whether the first instance of need.not is actually clause-initial or intervenes between the subject and the verb phrase (but see (28b)).

(27) NEED.NOT SIGN LEARN NEED.NOT PALM.UP

'[…] does not need to learn sign language.'

Before turning to the comparative perspective, it is worth noting that Coerts (1992), in a study on syntactic non-manual markers in NGT, provides two instances of NC (out of 102 negated clauses), both of which involve doubling – doubling of not (28a) (Coerts 1992: 214) and of the negative modal want.not (28b) (Coerts 1992: 216), respectively.

(28)

a. INDEX$_{3b}$ GET NOT PLATE NOT FOR PUNISHMENT

'The boy, he doesn't get a piece of flan for punishment.'

b. INDEX$_{1}$ WANT.NOT GO.TO$_{3a}$ DENTIST WANT.NOT INDEX$_{1}$

'I don't want to go to the dentist.'

4.3.2 Comparative perspective

Doubling of not has been reported by Nunes and Quadros (2008: 178) for Brazilian Sign Language (Libras) (29a), and by Baker-Shenk and Cokely (1996: 149) for ASL (29b), both classified as SVO languages. In both examples, the first not follows the subject, while the second occupies the clause-final position. Structurally, they are thus comparable to the NGT Example (24a).

(29)

a. INDEX$_{1}$ NOT WILL BUY CAR NOT

'I will not buy a car.'

b. L-E-E NOT MOVE-TO$_{2}$ DETROIT NOT

'Lee's not moving to Detroit. No way!'
For ASL and Libras, Petronio (1993), Quadros (1999), and Nunes and Quadros (2008) argue that doubling is a syntactic strategy for encoding emphatic focus. Marking of emphasis is also suggested by the translation that Baker-Shenk and Cokely (1996) offer for the sentence in (29b).

Finally, doubling of never and doubling of the negative completive marker have also been reported in the literature. The former is illustrated by the ASL example ((31a), Wood 1999: 64), the latter by examples from Auslan ((31b), adapted from Johnston 2018: 194) and Irish Sign Language ((31c), Zeshan 2004: 40).

5. Discussion

In her questionnaire-based typological study on negation in 38 sign languages, Zeshan (2004: 39) concludes that “the combination of two different manual negatives appears to be very rare, with almost no attested examples in the data”. While we are not in a position to make claims about how frequent or rare the phenomenon is in the sign languages we discussed, it is clear that NC is attested in a wide variety of sign languages, including NGT.

In the following sections, we discuss the outcomes of our journey from various perspectives. In Sections 5.1 and 5.2, our focus is on the direct yield: we evaluate the position of NGT within the typology of NC systems, and inspect the potential impact of sociolinguistic variables. In Section 5.3, we broaden our perspective by offering some cross-modal considerations. Finally, in Section 5.4, we address a number of methodological considerations that apply to work with corpus data in general.
5.1 NGT – A Negative Concord language?

The corpus data clearly demonstrate (i) that various types of NC involving two manual negators are attested in NGT, but their use appears to be rather uncommon, and (ii) that the use of NC structures is not restricted to a few signers – in fact, the 43 NC examples were produced by 23 different signers (see Section 5.2 for further discussion).

Observation (i) allows us to conclude that, when it comes to the combination of two manual negators, NGT behaves neither like a ‘strict’ nor like a ‘non-strict’ NC language. Remember that in a strict NC language, negative indefinites always require the presence of a negative licensor within the same clause, while in non-strict NC languages, this requirement only holds in certain syntactic configurations. Clearly, this does not hold for NGT, as negative indefinites in object (32a) and subject (32b) position commonly appear in a clause without another manual marker of negation.

(32) a. \(\text{\textit{If index\textsubscript{1} know nothing index\textsubscript{1} adopt}}\) \textsubscript{hs} [068-S005-02:28.00]  
‘If I don’t know anything, I adopt it.’

b. \(\text{\textit{Nobody see move down}}\) \textsubscript{hs} [704-S034-00:41.36]  
‘Nobody saw (him) coming down (from the roof).’

Thus, NGT displays a non-standard NC system, that is, a system in which NC is never obligatory. This raises the question why NC is sometimes used by NGT signers. While it is difficult to evaluate pragmatic considerations for corpus data, it seems that NC is sometimes used for emphasis (as has been suggested for ASL and Libras). For instance, in the doubling Example (24c), repeated here as (33a), the signer uses a facial expression that suggests that the example should rather be translated as ‘I really don’t mean that’. It might even be the case that emphatic use of NC is attested in NGT beyond doubling. For instance, in Example (14a), repeated as (33b), the rejection of a cochlear implant is clearly emphatic: the first-person pronoun makes contact with the body multiple times and is accompanied by the repeated mouthing \(\text{voor mij} \) (‘for me’), and the clause-final \(\text{not}\) involves two pronounced movements.

(33) a. \(\text{\textit{Index\textsubscript{1} not mean index\textsubscript{1} not}}\) \textsubscript{hs} [435-S021-01:33.28]  
‘I don’t mean (that).’

b. \(\text{\textit{Index\textsubscript{1} better never CI not}}\) \textsubscript{hs} [295-S018-05:24.20]  
‘I don’t want a CI.’
For many other examples, however, it would be highly speculative to assign any pragmatic function. We thus hypothesize that the use of NC is truly optional in NGT, as has also been suggested for GESL. It has been observed that in spoken languages that behave like ‘double negation’ (DN) languages in their standard form, the use of NC is sometimes optionally attested in non-standard varieties. In his famous study on the use of NC in Black English Vernacular (BEV), Labov (1972) discusses Example (34), uttered by Speedy J., a 15-year-old gang leader in South Central Harlem, and points out that a speaker of Standard English would assign the DN interpretation in (34a) to this utterance. However, from the context, it is clear that the intended meaning was actually the NC reading in (34b).

(34) It ain't no cat can't get in no coop

b. Meaning (NC): ‘There isn’t any cat that can get into any [pigeon] coop.’

Another case in point is Bavarian, a dialect of Southern Germany, which allows NC readings when one (or more) negative indefinites co-occur with the marker of clausal negation ned (‘not’). In (35a), for instance, the negative indefinite neamd (‘nobody’) combines with ned. NC is common in Bavarian, but is not obligatory, as shown by the non-NC counterpart in (35b).

(35) a. dass neamd ned kema is that nobody neg come aux ‘… that nobody came.’
b. dass neamd kema is that nobody come aux ‘… that nobody came.’

While we conclude that NC in NGT is, in most cases, truly optional, just as it is in BEV and Bavarian (see also Haegeman & Lohndahl 2010 for West Flemish), we emphasize that – in contrast to these two non-standard varieties – its use is relatively uncommon. For now, we have to leave open the question as to why some signers occasionally opt for NC, even in non-emphatic contexts.

5.2 Sociolinguistic considerations

Corpus data often reveal more intra- and inter-signer variation and optionality for grammatical phenomena than can be found in elicited data (e.g., De Beuzeville et al. 2009 for verb agreement in Auslan; Oomen & Pfau 2017 for the position of the basic clause negator in NGT). Likewise, the data from the Corpus NGT suggest that NC is by no means an obligatory strategy in NGT, and also that different types of NC
occur (including what is considered prototypical NC as well as doubling and NC involving negative modals). In order to find potential explanations for this variation, we turn to sociolinguistic variables to explore whether specific types of NC perhaps occur in certain varieties of the language only, as described for e.g. Bavarian above.

The sociolinguistic variables for which data is available for the signers in the Corpus NGT are (i) age, (ii) sex, and (iii) the sign region/dialect with which signers identify. Looking at age and sex, we observe that our data set includes utterances signed by 23 different signers of different ages (age range 17–82 years, mean age 42 years) and sexes (11 males, 12 females). That is, no specific age group or sex is overrepresented in our NC data. Moreover, there is no obvious correlation between the different types of NC we distinguished in Section 4 and participants’ ages or sex.

Most participants are represented in the data set only once ($n = 11$) or twice ($n = 6$). Five signers articulated three instances of NC, and one signer is overrepresented with five instances. Strikingly, all five instances involve the combination not + never, of which there are only seven present in our data set altogether. Thus, the observations presented above concerning NC involving not + never are based largely on utterances by a single signer.

As for the third sociolinguistic variable, we know that there is regional variation in NGT; more specifically, there is lexical variation that can be traced back to the different deaf schools that were first founded in the Netherlands (Schermer 2003; for an overview, see also Klomp 2021). The regions represented in the Corpus NGT correspond to the original locations of these schools: Groningen (North-East), Amsterdam (West), Voorburg and Rotterdam (South-West), and Sint Michielsgestel (South). The participants in our data set identify with different regions. Strikingly, signers from Groningen are overrepresented ($n = 14$), against only five signers from Amsterdam, and two signers in each of the categories “Other” and “Mixed”. Although in the entire corpus, signers from Groningen ($n = 30$) are also overrepresented compared to signers from Amsterdam ($n = 20$), that is, with a ratio of 3:2 (Groningen: Amsterdam), the difference in our data set is still comparatively large. Table 5 illustrates that the discrepancy between our data sample and the distribution in the entire corpus is present for almost all the NC categories that we distinguish in Section 4 (with ratios of 2:1 or higher in our data), with the exception of “basic clause negator + neg-word”, where the 3:2 ratio matches exactly with the Groningen: Amsterdam signer ratio in the entire corpus.\footnote{The numbers in Table 5 do not add up to 14 signers from Groningen, five from Amsterdam, and two in the categories “mixed” and “other” each, because some signers are included in the data set multiple times, across multiple NC types.}
Table 5. Type of NC by sign region

<table>
<thead>
<tr>
<th>NC type</th>
<th>N (total)</th>
<th>Groningen</th>
<th>Amsterdam</th>
<th>Mixed/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic clause negator + neg-word</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Involving negative modals</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Doubling</td>
<td>20</td>
<td>8</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Other casesa</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

a. “Other cases” include (i) the three instances that could not be analyzed as doubling since they include different variants of NOT OR NOTHING (see footnote 13) and (ii) one instance including NOT.YET...NEVER.

The corpus also includes signers from the southern regions Sint Michielsgestel (n = 4), Voorburg (n = 16), and Rotterdam (n = 4), but none of these signers show up in our search for NC. Of course, we cannot draw clear conclusions from this: a well-known drawback of corpus data is that they do not provide negative evidence. Moreover, signers from Sint Michielsgestel and Rotterdam are underrepresented in the corpus, compared to the other regions. Still, signers from all three southern regions were included in our search for the total number of clauses containing negation in the corpus (see Section 3.3). For instance, when we searched for NIET (‘not’) on the gloss tier, signers from all three southern regions showed up in the search hits. This indicates that at least some files including these signers have been annotated and thus could potentially have shown up in our searches. The fact that they did not, raises the interesting possibility that NC is mainly restricted to the northern and western sign regions in the Netherlands – a possibility that should be explored in future research.

It would be intriguing if NC indeed only occurred in the Amsterdam and Groningen variants, as it is usually assumed that the differences between NGT dialects are limited to the lexicon. In this respect, it is especially noteworthy that the lexicon of the Groningen variant – the region that is overrepresented in our data set – is the most distinct from the other variants. This study is not the first to suggest that regional differences may go beyond the lexicon: grammatical differences between the Groningen and Amsterdam NGT variants have previously been suggested by Oomen (2016) in her study on aspectual marking.

5.3 Cross-modal considerations

We are now in a position to place the results reported for NGT into broader cross-modal perspective. In Section 5.1, we concluded that NC in NGT is optional yet uncommon; that is, NGT displays a non-standard NC system. As such, NGT can be
added to a lengthy list of sign languages for which NC has either been claimed to be optional – including, but not limited to, GESL (Makharoblidze & Pfau 2018), LSC (Pfau & Quer 2002), ASL (Fischer 2006; Wood 1999), and TİD (Zeshan 2006) – or to be absent – for example, LIS (Geraci 2006) and DGS (Pfau 2016). Only RSL has thus far been reported to involve obligatory NC in certain syntactic configurations (Kuhn & Pasalskaya 2019).

As such, it is tempting to conclude that sign languages differ from spoken languages in having an apparent dispreference for genuine NC, which in turn invites the question whether modality-specific factors might be at play here. Indeed, Kuhn (2020) has made exactly such a claim, proposing that iconic pressures generate a semantic conflict in constructions with two (manual) negative elements, thus creating a bias against NC in sign languages. According to Kuhn, whenever a manual sign representing a discourse referent is articulated, it triggers an iconic inference that this referent exists, given that the manual sign must necessarily be placed in the signing space. Crucially, this inference directly contradicts a condition of NC items (Kuhn 2022), namely that they can only occur in environments that block the introduction of new discourse referents. Although RSL demonstrates that the pattern is not absolute, Kuhn (2020: e339) points out that “typological generalizations emerge based not on what is possible at the level of a given conversation, but based on what is easiest at the level of a linguistic community”.

We find Kuhn’s (2020) explanation of the low frequency of occurrence of canonical NC in sign languages insightful. At the same time, a typological study on a variety sample of 179 spoken languages by Van der Auwera and Van Alsenoy (2016) suggests that the conclusion that NC would be much rarer in sign languages than in spoken languages might be premature. The authors investigate the frequency of NC in spoken languages, essentially replicating an earlier typological study by Kahrel (1996), but including a significantly higher number of languages in their worldwide sample. Both studies arrive unequivocally at the same conclusion: NC is, in fact, rather uncommon in spoken languages.

Just five (12.5%) of the 40 languages in Kahrel’s (1996) study allow for NC. Van der Auwera and Van Alsenoy (2016) cite a slightly higher percentage of NC languages (19%), but point out that this percentage is almost certainly an overestimation as a result constraints imposed by the method. In addition, they show that NC is most frequent in Eurasian languages, with about half of the languages from this macro-area in the sample involving NC. Eurasian languages, and Indo-European languages in particular, are overrepresented in the NC literature, which perhaps has contributed to the false impression (as Van der Auwera and Van Alsenoy show) that NC is abundantly used across spoken languages. NC languages from the five
other macro-areas represented in the sample are much less frequent, ranging from 5.3% (Australia and Papua New Guinea) to 23.8% (South-East Asia and Oceania) of the languages included in the sample for each macro-area.\textsuperscript{15}

Based on the currently available literature, we tentatively conclude that canonical NC is indeed rarer in sign languages than it is in spoken languages, although Van der Auwera and Van Alsenoy’s (2016) study suggests that the difference should also not be overstated. The stronger dispreference displayed by sign languages could receive a modality-specific explanation, such as the one offered by Kuhn (2020), but it might also be an artifact of the fact that all known sign languages are no more than several hundred years of age. The phenomenon of NC has been related to Jespersen’s Cycle (Jespersen 1917), and sign languages might simply be too young to have entered the cycle, although Pfau (2015) contends that this is not the case.

If language age is a factor, then we might expect to find NC patterns to be rare among creole languages, too, as these also emerged relatively recently. After all, it has been observed that sign languages share other linguistic characteristics with young creoles (e.g., Adone 2012; Fischer 1978; Gee & Goodhart 1988; Lupton & Salmons 1996). However, a study by Van der Auwera (2015) on clausal negation patterns in creoles suggests that this is not the case. Of the 53 creole languages included in his study, about 80% use constructions that appear to involve NC (of the strict or non-strict type). Although Van der Auwera (2015) acknowledges that this percentage might be a slight overestimation, given a lack of information available for some of the studied languages, NC seems to be rather common in spoken language creoles. Still, these results are not surprising, given that many creoles have a superstrate NC language.\textsuperscript{16} Thus, at this stage, we cannot draw any firm conclusions regarding language age as a potential factor in explaining the frequency of occurrence of NC in sign languages or creoles. Further research may shed more light on the matter.

\textsuperscript{15} It is worth noting another phenomenon within the domain of negation which has been suggested to occur infrequently in sign languages, namely Negative Polarity Items (Quer 2020; cf. Schlenker 2017). In contrast to NC, Van der Auwera and Van Alsenoy (2016) confirm that the use of Negative Polarity Items is quite common in spoken languages, being attested in almost half of the languages in their sample.

\textsuperscript{16} This cannot be the whole story, as Van der Auwera (2015) also shows that 20 of the creoles in his sample that allow a (strict or non-strict) NC pattern have English as their superstrate language, which, in its standard form, is not an NC language. Interestingly, the frequently used strategy in English of combining a verb negator with a Negative Polarity Item (\textit{any-}) is hardly used as a strategy – and never as the only available one – in any of the English-based creoles.
5.4 Methodological considerations

At the beginning of this chapter, we noted that, when embarking on a journey, one should seek advice from others who have undertaken a similar journey. In line with this, we return to our second goal: offering some general methodological guidelines for those who, like us, plan on exploring a sign language corpus.

First, the search procedure we described in detail in Section 3 illustrates how the potential outcome of a corpus study is largely constrained by how the corpus has been designed and by the degree of annotation. Naturally, the searches that can be conducted are highly dependent on the available annotations. In our case, only a part of the Corpus NGT files have been annotated with ID-glosses, and translations are available for an even smaller part. Other annotations that would have been very useful for our purpose (e.g., for headshake or clause boundaries) are not (yet) available.

Second, certain limitations regarding the search procedure also have an impact. For example, ELAN only allowed us to search for two negators on the same tier, automatically excluding potential instances of NC where the signer produces the two negators on different hands (see Section 3.2). Owing to these limitations resulting from the annotations and search options, one will probably never find all instances of the construction under investigation. It is vital to take these limitations into account when defining search terms and criteria.

Further important restrictions arise from the type of data that corpora contain, namely naturalistic, (semi-)spontaneous data. This data type does not provide negative evidence, complicating the identification of patterns, as our study also illustrates: for some combinations of manual negators, we cannot be certain whether they do not occur in the corpus data because they are ungrammatical, or because they are optional. In order to disentangle these options, corpus data would need to be supplemented by grammaticality judgments. Similarly, it is often difficult to pinpoint how a specific sentence should be interpreted. In analyzing our data, for example, it was sometimes impossible to be entirely sure about the possible impact of pragmatic factors such as emphasis or false starts. Researchers should be aware of the influence that their own interpretation of the data may have on the potential results.

Nevertheless, the present study illustrates that corpus data have certain advantages over elicited data (for a comparison of elicitation and corpus methods, see Kimmelman et al. 2018). Without doubt, a carefully conducted corpus search for a specific grammatical construction, which takes into account the considerations above, will give a good estimate of the general frequency of a construction in the corpus – and, by extrapolation, if the corpus is large enough, in the language. This is not something that elicitation-based methods can offer, as these can only
provide information about the general acceptability of construction types, not their frequency of occurrence in natural language use. Further, when sociolinguistic information is available, and the corpus includes signers with diverse sociolinguistic profiles, as is the case for the Corpus NGT, corpus data have the potential to reveal sources of variation that merit further investigation. Our study demonstrates that both frequency of occurrence and sociolinguistic variation are important factors to consider when interpreting results from a corpus study.

6. Conclusion

Our search for instances of NC in the Corpus NGT was not an easy journey. On the way, we encountered some potholes which forced us to slow down or even take a detour. The search for and identification of genuine cases of NC, for instance, presented us with a number of obstacles. It is our hope that our detailed report on the choices we made in our search and annotation methods will facilitate similar journeys to be undertaken by other researchers in the future.

Still, our efforts were certainly worthwhile. We returned with a small, yet multifaceted data set, which allowed us to put NGT in typological perspective by comparing the attested patterns to those previously described for other sign languages as well as spoken languages. We find that NGT displays NC of the non-standard type, as NC involving two manual negative signs is attested, but is optional and uncommon. In this way, NGT patterns with other sign languages like ASL and GESL, and with spoken languages like Georgian and Bavarian.

We offered some speculations about linguistic and sociolinguistic factors that might affect the use of NC in NGT. As for the former, it seems that NC can be employed as a strategy for encoding emphasis, as has also been suggested for other sign languages. As for the latter, our data suggest regional variation in the use of NC. Clearly, more research is necessary to further scrutinize the impact of these (and possibly other) factors – not just for NGT, but also for other sign languages. Moreover, any comprehensive account of NC in a specific sign language (see e.g., Oomen & Pfau 2017 for NGT; Pfau 2016 for DGS) should not only consider NC involving two manual negators – which was the focus of the present study – but also NC resulting from the combination of a manual and a non-manual negative marker. It may then turn out that a sign language which behaves as a non-standard NC language when it comes to the first type of NC should be classified as a Strict NC language with respect to the latter.
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