

# Chapter 1

## Negation in Sign Language of the Netherlands

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This chapter addresses negation in Sign Language of the Netherlands, a language in the visual-spatial modality. Throughout this chapter, we will address several aspects of negation that are modality-independent, such as the occurrence of negative particles, but also pay attention to structures that are particular for sign languages, such as the simultaneous use of grammatical non-manual markers. In the introduction, we provide some information on Sign Language of the Netherlands (NGT) in general, and we briefly go into our methodology. Then we continue to describe properties of negation in NGT step by step, based on previous research, but also by providing new data on phenomena that have, until now, not received much attention within the field of sign language linguistics, such as negative transport.

### 1 The language

Sign Language of the Netherlands (*Nederlandse Gebarentaal*, NGT; iso 639-3 = dse, Glottolog = dutc1253) is used by at most 10,000 deaf signers (see Klomp 2021: for more details on these numbers). Additionally, there is a considerable number of (native and L2) hearing signers, including family members of deaf people and interpreters, for example. Cokart et al. (2019) estimate the total group of signers

in the Netherlands to be 60,000 people. On October 13, 2020, after many years of lobbying (Cokart et al. 2019), NGT has been officially recognized as a minority language in the Netherlands.

The origins of NGT lie in Paris, France, where Charles-Michel de l'Epée (1712–1789) was the first teacher of deaf children who systematically used signs in his educational methods. The Dutchman Henri Daniel Guyot (1753–1828) visited the lessons of De l'Epée and implemented De l'Epée's methods in Guyots' newly founded Dutch school for the deaf in the Netherlands (Tijsseling 2014). In the years that followed, other schools for the deaf opened their doors all across the Netherlands. The schools had different preferences in their methods and language policies: from roughly 1880-1980, signing was discouraged or even forbidden in most schools for the deaf throughout Europe (van den Bogaerde et al. 2016). The emergence and development of NGT had not been documented properly, until the pioneering linguist Ben Tervoort described the signs used by children at the deaf school in St. Michielsgestel as truly linguistic (Tervoort 1953). There are strong indications that children were secretly signing in boarding schools, at home, or with friends at the playgrounds (Tijsseling 2014). Due to the discouragement of signing and to the physical distances between deaf schools, there is striking variation in the vocabulary of NGT. We sometimes speak of five “dialects”, referring to the five locations of the former deaf schools, which were situated in the North (Groningen), the South (St. Michielsgestel), the North-West (Amsterdam) and the South-West (Rotterdam and Voorburg); see Figure 1. However, to date, research into the grammar of NGT, which started in the 1980s, has not provided clear evidence of regional grammatical differences.

NGT is a comparably well-studied sign language, but its description is an ongoing project. NGT has two common word orders, namely SOV and SVO (van Gijn 2004; Oomen & Pfau 2017). As in any sign language, NGT employs manual and non-manual elements to express meaning. Non-manual elements are linguistic signals produced by the head, face and upper-body. The non-manual element that is most relevant for the current chapter is the headshake: a (single or repeated) side-to-side movement of the head that has grammaticalized from the gestural negating headshake in NGT (van Loon et al. 2014). Another non-manual articulator that will occasionally be mentioned is the mouth, which can produce articulations that are word-like (e.g. the silent articulation ‘if’ accompanying the sign IF), so-called mouthings, and articulations that are not word-like (e.g. the articulation ‘ssh’ accompanying the sign BE.PRESENT), so-called mouth gestures (Bank 2014).

In terms of methodology, we base the descriptions presented in this chapter



Figure 1: The locations of the five schools for the deaf in the early 20th century in the Netherlands. © Nederlands Gebarencentrum. Reprinted with permission.

on earlier corpus research performed by Oomen & Pfau (2017), on additional corpus data extracted for the purpose of this chapter, on previous literature, and on data from several deaf consultants. The corpus data come from the Corpus NGT (Crasborn et al. 2008), in which, in its current version, 92 deaf signers (17 to 84 years old) participated. Note, however, that only about 16% of the corpus is annotated for sign glosses, and about 9% for Dutch translations – i.e. only a small part of the data allows for automatic searches. The deaf consultants varied in age, gender and language background (e.g. at which age they acquired NGT and which variant they use), but all indicated that NGT is their first and most-used language.

The structure of this paper follows the structure of the questionnaire for describing the negation system of a language presented in the volume in which this article appears (Miestamo forthc.).

Before embarking on our description of NGT negation, we wish to point out that negation, unlike many other domains of grammar, is a topic which has been relatively well described for a considerable number of sign languages; see e.g. Zeshan (2004) for a typological survey of negative constructions in 37 different sign languages, and Quer (2012) and Gökgöz (2021) for comprehensive overviews. From the body of work that is already available, it is abundantly clear that – just

like in spoken languages – there is a considerable variation in how negation is expressed in different sign languages. We therefore remind the reader that the observations and patterns reported in this chapter are specific to NGT and should thus not be assumed to apply across sign languages.

## 2 Clausal negation

### 2.1 Standard negation

Similar to what has been described for many other sign languages, the realization of standard negation in NGT involves two types of markers. Firstly, a side-to-side headshake is used as an obligatory non-manual marker, which simultaneously accompanies (part of) the negated clause. Secondly, there are manual markers, the most common one being the particle NOT1, which is articulated with a handshape with extended index finger performing a single sideward movement in front of the signer's body (see Figure 2a). Alternatively, the negator NOT2 may be used, which involves the same movement but a handshape with all fingers extended (see Figure 2b). The forms may be articulated with one or two hands moving outward to the side.<sup>1</sup>



(a) NOT1



(b) NOT2

Figure 2: Two manual signs that may function as basic clause negotiators in NGT. Video stills from the Corpus NGT.

Considering first the manual particles, it has been observed that they can occur in two positions in the clause, either directly preceding the verb phrase or in clause-final position, the latter position being the more common one (Oomen &

<sup>1</sup>In constructed examples and in the running text, the gloss NOT is used as an umbrella gloss for both basic clause negator forms.

Pfau 2017; Oomen et al. 2018). Crucially, the different positions do not trigger interpretive differences, that is, differences in the scope of negation (see further Section 4.1). The two options regarding the placement of NOT are illustrated in (1a) and (1b) (Oomen & Pfau 2017: 21, 30). The right-aligned codes in the examples refer to the corresponding video files in the Corpus NGT and the signer ID; an explanation of the **glossing conventions** can be found at the end of the paper.

- (1)    a. INDEX<sub>1</sub> POINT UNDERSTAND NOT<sub>1</sub>  
 hs  
 ‘I don’t understand/get the point.’ [390-S019]
- b. INDEX<sub>1</sub> NOT<sub>1</sub> OPINION HAVE INDEX  
 hs  
 ‘I don’t have an opinion on that.’ [063-S005]
- c. INDEX<sub>1</sub> REACT NOTHING<sub>1</sub>  
 hs  
 ‘I don’t react (to it.)’ [539-S026]

Occasionally, the n-word NOTHING<sub>1</sub> (see Figure 16c in Section 3.2) may be used for standard negation, as, for instance, in (1c) – a pattern that is familiar from spoken languages (Jespersen 1917). From the context in which (1c) was signed, it is evident that the intended meaning was not ‘I don’t react to anything’. At present, it is not clear whether NOTHING<sub>1</sub> allows for variable positioning within the clause on a par with NOT, as it consistently follows the verb in the available examples.

This combination of two markers – a manual and a non-manual one – in the expression of standard negation is reminiscent of Negative Concord (cf. split negation in French). Importantly, however, the use of a manual negative sign is optional in NGT. NGT thus qualifies as a so-called ‘non-manual dominant’ sign language, that is, a sign language in which the non-manual marker is obligatory while the manual negator is optional (Zeshan 2006). In fact, clauses are commonly negated by a headshake only. Oomen & Pfau (2017), for instance, report that 59.8% of the negative clauses they extracted from Corpus NGT are negated by a headshake only (also see Coerts 1992). Two examples are provided in (2). The clause in (2a) displays SOV order, but the verb is followed by a so-called subject pronoun copy, a pointing sign that refers back to the subject (Oomen & Pfau 2017: 23); the constituent order in (2b) is SVO.

- (2)    a. INDEX<sub>1</sub> INDEX REACT INDEX<sub>1</sub>  
 hs  
 ‘I don’t react to it/reply to it.’ [539-S026]

- b. BOY WATCH TELEVISION INDEX<sub>3b</sub> hs  
‘The boy did not watch television’ (Coerts 1992: 218)

The fact that headshake alone is capable of changing the polarity of a clause is clear evidence that it is not just a gestural element – as has been claimed for e.g. Australian Sign Language (Johnston 2018) – but rather a functional element that is part of the grammar of the language (Pfau 2015). In addition, while there is some variation in the scope of the headshake, its exact distribution is constrained. The first aspect to emphasize is that there is no one-to-one relation between scope of the headshake, that is, its onset/offset in relation to the manual sign(s) it accompanies, and scope of negation (see Section 4.1). This is illustrated by the near-minimal pair in (3), two clauses that were articulated by the same signer in close proximity to each other: the scope of the headshake differs in the two utterances, but the scope of negation is the same.

- (3) a. INDEX<sub>1</sub> MAYBE INDEX<sub>1</sub> GRASP hs  
‘Maybe I didn’t notice (it).’ [069-S005]
- b. INDEX<sub>1</sub> MAYBE GRASP INDEX<sub>1</sub> hs  
‘Maybe I didn’t notice (it).’ [069-S005]

As for the scope of the headshake in standard negation, the following observations can be made:

- When NOT is present, it is always accompanied by headshake, see (1);
- The headshake combines with at least the verb, even when the negative particle NOT is used;
- Objects (pronominal and non-pronominal ones) are optionally accompanied by headshake, but they are highly likely to be accompanied by headshake when they follow the verb, as in (2b);
- Subjects tend to be outside the scope of the headshake except when they are pronominal, as in (1b) and (1c);
- Some clause-final signs like subject pronoun copies, as in (2a) and (3b), and the sign PALM-UP (PU) – a multifunctional sign which commonly appears clause-finally – may be accompanied by headshake;

- Clause-initial topics always fall outside the scope of the headshake, as illustrated in (4), where the direct object has been topicalized, marked by means of raised eyebrows ('re').

(4)   
‘Red cabbage, I don’t like (it).’

Given these facts, it has been claimed that the scope of the headshake, rather than being determined by its semantic scope, tends to align with the prosodic structure of the clause (Oomen et al. 2018). This explains why (i) topics, which constitute separate intonational phrases, are outside the scope of the headshake; (ii) pronominal subjects are more likely to fall under the scope of the headshake, as they are more easily prosodically integrated into the clause (Oomen & Pfau 2017); (iii) headshake may spread onto certain clause-final elements, as these are prosodically light elements (Crasborn et al. 2012).

Based on these patterns, it has been argued by Oomen et al. (2018) that standard negation in NGT involves the combination of (i) an optional negative particle, which is lexically specified for a headshake, and (ii) a non-manual (suprasegmental) affix, the headshake, which attaches to the verb and optionally spreads over prosodically defined domains (comparable to tone sandhi phenomena in spoken language; see Pfau 2016).

Neither in negative clauses containing NOT nor in those without do we observe constructional or paradigmatic asymmetry (Miestamo 2009). As for the former, the marker(s) are simply added to the corresponding affirmative clause, and just as in affirmative declarative clauses, both SOV and SVO order is attested, and pro-drop is commonly observed. As for the latter, inflectional categories on the verb are not influenced by the polarity of the clause (note, however, that inflectional categories that commonly partake in paradigmatic asymmetry, like tense and irrealis, are not marked on NGT verbs).

## 2.2 Negation in non-declaratives

The only sentence type we know of to have a dedicated negative form in NGT is the imperative. Negative imperatives (also called prohibitives) partially show the same marking as negative declaratives, but can also involve a specific prohibitive manual marker and specific non-manual markers – note, however, that this generalization is based on only one small-scale study with data on 27 negative imperatives in NGT. We describe the results of this study (Spruijt 2019) step

by step: first, we present the manual markers of negative imperatives; second, we describe the non-manual markers; and third, we address how NGT negative imperatives fit into the classification of prohibitives as proposed by van der Auwera et al. (2013).

As for manual markers, NGT has the prohibitive particle PROH, which can occur in two forms (Figure 3) and always occurs sentence-finally (Spruijt 2019). The forms are similar to NOT1 and NOT2 (see Figure 2) apart from the movement: the prohibitive forms in Figure 3 involve a repeated side-to-side movement, while NOT1 and NOT2 are articulated with a single sideward movement. The prohibitive marker is optional, and can be observed in prohibitions, negative instructions, and in negative recommendations. An example of the latter is presented in (5).

(5) NOT CHOOSE INDEX<sub>3</sub> PROH

'Don't choose it!'

(Spruijt 2019: 18)<sup>2</sup>



Figure 3: Two variants of the prohibitive marker PROH (Spruijt 2019: 18).

In example (5), the prohibitive marker is combined with the basic negator NOT. However, NOT can also occur on its own in prohibitive contexts, as in (6), which demonstrates the optionality of the prohibitive marker.

(6)                        <sup>hs</sup>

HEY REQUEST    <sup>sq</sup>  
NOT SALT MUCH PUT.IN  
'Hey, please don't put in too much salt.'

(Spruijt 2019: 20)

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<sup>2</sup>Spruijt (2019) does not specify headshake marking or which forms of NOT and PROH are used.

Example (6) is additionally marked by non-manual markers. Firstly, there is a headshake, which is, as mentioned in Section 2.1, an obligatory marker of sentential negation in NGT. Secondly, the main part of the clause in (6) is accompanied by squinted eyes, one of the non-manual markers that are specifically found in negative imperatives but not in negated declaratives. Figure 4 illustrates this marker.



Figure 4: Squinted eyes (adapted from Spruijt 2019: 18).

Other non-manual markers that are associated with prohibitives are furrowed brows (displayed in 3a above) and a wide, closed or slightly opened, tensed mouth (visualized in Figures 3a and 3b, respectively). Squinted eyes usually mark the entire sentence, while the scope of furrowed brows and of a tensed mouth varies (Spruijt 2019). The following negative instruction is accompanied by a headshake, furrowed brows, and a tensed mouth.

- (7) TRAFFIC.LIGHT STRAIGHT.AHEAD PROH  
‘At the traffic light, don’t go straight ahead.’ (Spruijt 2019: 20)

Interestingly, however, none of the described manual and non-manual markers are obligatory. We now turn to the typological classification of NGT imperatives. The classification of van der Auwera et al. (2013) captures two morphosyntactic characteristics: whether the sentential negative marking of declaratives is used, and whether the second-person singular verb form is used in imperative contexts. As for the first aspect, we have shown above that NGT can indeed use the same strategy for negative sentential marking in prohibitives as in declaratives. The main marker of sentential negation in both sentence types is the headshake, and there is no clear evidence that there are differences in the occurrence

and spreading of the headshake between prohibitives and declaratives. The manual negator NOT is in both cases an optional marker. However, another strategy is to use a dedicated prohibitive marker, which gives rise to an asymmetric pattern. As for the second aspect, NGT verbs do not have a special form in prohibitive as opposed to positive imperative contexts: it is the regular second-person form which is utilized (see [Spruijt 2019](#)).

As such, NGT shows characteristics of both type 1 and type 2 languages in [van der Auwera et al.'s \(2013\)](#) classification. Type 1 languages use the verbal construction of the second singular imperative and a sentential negative strategy found in (indicative) declaratives, comparable to NGT imperatives without dedicated prohibitive marker. Type 2 languages also employ a second singular imperative construction, but the sentential negation strategy is not found in (indicative) declaratives, as in NGT imperatives with PROH.

### 2.3 Negation in stative predicates

It has been reported for some sign languages that the position of the manual negator relative to the predicate differs in stative vs. verbal predication (see e.g. [Bergman 1995](#) on Swedish Sign Language and [Vogt-Svendsen 2000](#) on Norwegian Sign Language).

In NGT, most types of stative predication, including predication of proper inclusion, equation, attribution, and possession, do not seem to involve special negation strategies. As in negated verbal predication, the manual negator (if present) in these types of stative predication may occur before (8a) or after (8b) the predicate. As illustrated by the examples in (8), (8c) being an instance without manual negator, the attested headshake spreading patterns in stative predication also mirror those in standard negated sentences (see Section 2.1).

- (8)    a. NOT DIFFICULT<sup>hs</sup>  
      ‘[It] isn’t difficult.’ [060-S006]
- b. INDEX<sub>1</sub> SICK NOT<sup>hs</sup>  
      ‘I am not sick.’ [476-S024]
- c. INDEX<sub>3</sub> SELF BASIS STRONG ENOUGH INDEX<sub>3</sub><sup>hs</sup>  
      ‘Their basis isn’t strong enough.’ [386-S019]

Negated locative predication also display regular behavior. NGT, like other sign languages, tends to use classifier predicates to convey locative relations be-

tween entities. Classifier predicates are productive complex signs which combine a handshape morpheme representing an entity and a verb stem expressing a location or movement trajectory. For example, in the constructed sentence in (9a), the signer uses the classifier handshape for thin flat objects to represent a book, and combines it with a short downward movement to demonstrate that the book is located on top of another object, in this case a table. The place of articulation of the classifier predicate aligns with that of the sign TABLE. The construction in (9a) may be negated through the addition of a headshake over the predicate (9b). As usual, a manual negator is optional. Figure 5 illustrates the string of signs that make up (9b) in pictures.

- (9) a. BOOK <sup>re</sup> TABLE<sub>3</sub> CL:FLAT.OBJECT.ON.SURFACE<sub>3</sub>  
           ‘The book is on the table.’
- b. BOOK <sup>re</sup> TABLE<sub>3</sub> CL:FLAT.OBJECT.ON.SURFACE<sub>3</sub> <sup>hs</sup>  
           ‘The book is not on the table.’

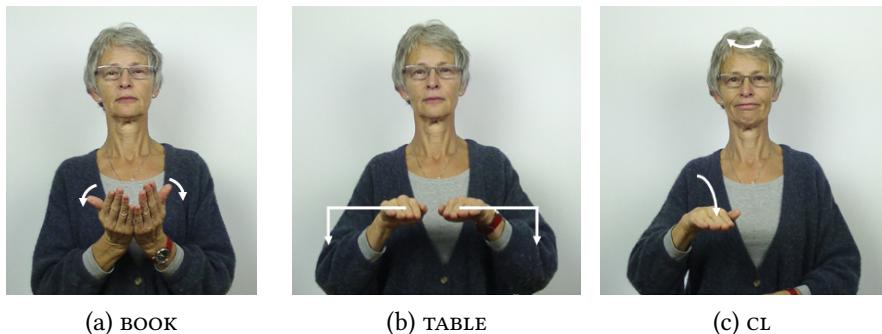


Figure 5: The string of signs from the example in (9b).

Interestingly, existential constructions with a classifier predicate such as (10a), which are otherwise structurally very similar to locative predictions, cannot be negated by simply adding a headshake, an observation that implies paradigmatic asymmetry (Miestamo 2009).<sup>3</sup> Indeed, it is ungrammatical to negate a classifier predicate if the entity the classifier refers to has an indefinite interpretation (10b).

<sup>3</sup>As far as we are aware, there are no studies that discuss indefiniteness in NGT. As for the locative constructions in NGT under discussion, our consultant indicates that reversal of the figure (BOOK) and the ground (TABLE), as in the constructed examples in (10), is associated with an indefinite interpretation.

Instead, signers opt for alternative strategies. One possibility is the use of the predicate BE.PRESENT. This sign can be used in lieu of a classifier predicate in affirmative existential constructions, as illustrated in (10c).<sup>4</sup> In a negative existential construction, BE-PRESENT is negated like any other predicate, that is, by means of a headshake (10d).

- (10)    a.  $\overline{\text{TABLE}_3} \text{ BOOK CL:FLAT.OBJECT.ON.SURFACE}_3$   
 ‘There is a book on the table.’
- b. \*  $\overline{\text{TABLE}_3} \text{ BOOK } \overline{\text{CL:FLAT.OBJECT.ON.SURFACE}_3}$   
 ‘There is no book on the table.’
- c.  $\overline{\text{TABLE}_3} \text{ BOOK BE.PRESENT}_3$   
 ‘There is a book on the table.’
- d.  $\overline{\text{TABLE}_3} \text{ BOOK } \overline{\text{BE.PRESENT}_3}$   
 ‘There is no book on the table.’

The predicate sign NOBODY.HERE (Figure 6; also see Section 3.2 on negative indefinites) can also be used in negative existential contexts. It conveys the meaning ‘nobody (is) present/here’ ([Nederlands Gebarencentrum n.d.](#)).



Figure 6: NOBODY.HERE. Video still from the Corpus NGT.

## 2.4 Negation in non-main clauses

Finite and non-finite subordinate clauses are not easily distinguished in NGT, as verbs do not inflect for tense; also, there are no word order differences between

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<sup>4</sup> BE.PRESENT may also be used in locative predictions.

main and embedded clauses (as there are in, for instance, spoken Dutch). The available evidence strongly suggests that both complement clauses under *know*-type predicates (which commonly take finite complements) and under *want*-type predicates (which commonly take non-finite complements; Noonan 2007) are negated in exactly the same way as main clauses, that is, by the manual negator in combination with headshake, or by headshake only. The latter option is illustrated by the examples in (11).

- (11) a. MARIJKE INDEX<sub>3a</sub> KNOW / INGE  $\overline{3b \text{COME}_{3a}}$   
           ‘Marijke<sub>i</sub> knows that Inge doesn’t come to her<sub>i</sub>.’
- b. INGE INDEX<sub>3a</sub> WANT / MAN INDEX<sub>3b</sub>  $\overline{\text{PRESENT}_{3b} \text{GIVE.PRESENT}_{3a}}$   
           ‘Inge<sub>i</sub> wants the man not to give her<sub>i</sub> a present.’
- (adapted from van Gijn 2004: 123f)

Similarly, adverbial clauses do not employ any construction-specific negation strategy either. In (12), we provide examples involving a negative conditional clause (see also Klomp 2019) and a negative cause clause.

- (12) a.  $\overline{\text{IF}_{\text{re}} \text{HEARING.AID}}$   $\overline{\text{WORK NOT}}$  / PU BACK OLD DEAF PU  
           ‘If the hearing aid does not work, you’re back at your old deaf self.’
- [2035-S081]
- b. INDEX<sub>1</sub> DISAPPOINTED / BECAUSE  $\overline{\text{TEST PASS}}$   
           ‘I’m disappointed because I didn’t pass the test.’

Although this section is about non-main clauses, we also briefly have to address the main clause, or rather the main clause predicate, involved in the complex construction. This is of relevance, as it has been observed that in complex sentences in which only the main clause predicate is negated, the headshake may spread over the embedded clause. In other words: the non-main clause appears to be affected by matrix negation even though its polarity is positive, as is illustrated in (13a). Still, as also pointed out by van Gijn (2004), spreading is not obligatory in these cases, as evidenced by the corpus example in (13b) (see Section 4.6.1 for further discussion in the context of negative transport).

- (13) a. INDEX<sub>1</sub>  $\overline{\text{WANT / COME.ALONG}_1}$   
           ‘I do not want you to come along.’ (adapted from van Gijn 2004: 113)

- b. INDEX<sub>1</sub> <sup>hs</sup> SAY NOT / MUST EVERYTHING ORAL  
'I'm not saying that everything should be about speaking.' [429-S022]

## 2.5 Negative lexicalizations

NGT has verbal and non-verbal negative lexicalizations. The morphological processes that resulted in these lexicalized forms are not always transparent, which sometimes makes it difficult to distinguish cases of cliticization from cases of true negative lexicalizations. We base the categorization of the following lexicalized negative forms on the extent to which they differ phonologically from potential corresponding positive forms.

First, we take a look at the modal verbs that have specialized negative forms. These negatives are the signs CAN<sup>^</sup>NOT, MAY.NOT, WANT.NOT, and NEED.NOT. The first example CAN<sup>^</sup>NOT (Figure 7b) is a result of cliticization, where the manual negator NOT (see Figure 2a) has cliticized onto the modal verb CAN (Figure 7a).



(a) CAN



(b) CAN<sup>^</sup>NOT

Figure 7: The modal verbs CAN and CAN<sup>^</sup>NOT. Video stills from the Corpus NGT.

The negative modals MAY.NOT (Figure 8b) and WANT.NOT (Figure 9b) are clearly different from CAN<sup>^</sup>NOT in that they are phonologically more distinct from their positive counterparts (Figure 8a and 8b respectively); still they maintain some of the phonological characteristics of MAY and WANT, respectively. The sign MAY contains an outward movement, which is maintained in MAY.NOT, but the handshape of MAY has changed into the *flat*-handshape in MAY.NOT. Also note that MAY.NOT in Figure 8b is articulated with one hand, making it very similar in form to the basic clause negator NOT1 (Figure 2a). Often, however, the sign is articulated with both hands, which is not the case for NOT1. If we compare WANT.NOT

to WANT, we observe a handshape change as well, which is furthermore accompanied by a downward path movement instead of the hand-internal movement in WANT (in which the fingers flex repeatedly). The modal NEED.NOT is a negative lexicalization without a clear positive counterpart.



Figure 8: The modal verbs MAY and MAY.NOT. Video stills from the Corpus NGT.



Figure 9: The modal verbs WANT and WANT.NOT. Video stills from the Corpus NGT.

It is worth pointing out that naturalistic corpus data suggest that the use of a specialized negative modal, such as the ones illustrated above, is not always obligatory. That is, at least some modal meanings can also be negated using standard negation strategies. In (14), we illustrate this for the modal verb CAN: (14a) exemplifies the use of the negative modal CAN^NOT; in (14b), the base form of

the modal combines with the negative particle NOT (and headshake); in (14c), the modal is negated by headshake only.

- (14) a. DISABLED MOVE<sub>3</sub> CAN<sup>^NOT</sup>  
 ‘The disabled cannot move (to another place).’ [486-S024]
- b. SIGN.LANGUAGE CAN NOT<sub>1</sub> COMBINE  
 ‘(You) can’t combine sign language [...].’ [428-S022]
- c. CAN IMAGINE INDEX<sub>1</sub> THEN  
 ‘Then I can’t envision it.’ [430-S022]

Another specialized negative verb form, although not modal, is the cliticized form DO<sup>^NOT</sup> (Figure 10b).<sup>5</sup> The handshape of DO (Figure 10a) is maintained in the negative DO<sup>^NOT</sup> (Figure 10b) but the movement has changed and is now similar to the movement of the particle NOT (but see Klomp (2021) for two alternative analyses).

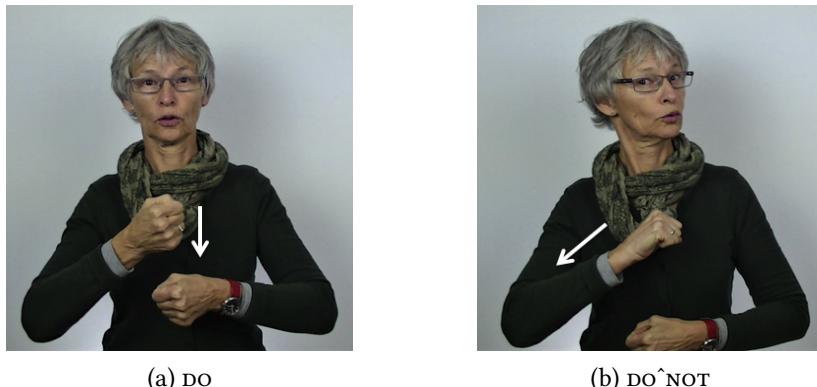


Figure 10: The verbs DO and DO<sup>^NOT</sup>.

An example of a non-verbal specialized negative is the adjectival predicate NOT.AWARE. The sign is shown in Figure 11b, together with the positive predicate AWARE (Figure 11a), which has the same initial place of articulation.

Furthermore, NGT employs a dedicated negative construction in perfective / compleptive contexts. While these aspectual meanings are commonly expressed

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<sup>5</sup>DO(^NOT) is a main verb that appears in contexts such as ‘I will (not) do it tomorrow’.



Figure 11: The verbs AWARE and NOT.AWARE.

by the marker **ALREADY** in affirmative clauses (15a), in negative contexts, the marker **NOT.YET** (Figure 12) is used, as illustrated in (15b). It appears that **NOT.YET**, just like **NOT**, may precede or follow the verb.



Figure 12: The negative adverbial NOT.YET.

- (15) a. AIRPLANE  $\exists_a$  COME<sub>1</sub> ALREADY  
       'The plane has (already) arrived.'

b. AIRPLANE NOT.YET  $\exists_a$  COME<sub>1</sub> PU<sup>hs</sup>  
       'The plane has not yet arrived.'

Let us add one final example of a negative lexicalization, which behaves as an idiomatic clausal construction in NGT: DOES.NOT.MATTER, which translates as '[it] does not matter', involves a repeated alternating brushing movement of the two hands, as shown in Figure 13. In example (16), the sign is used twice.



Figure 13: DOES.NOT.MATTER

- (16) INDEX<sub>1</sub>  $\overline{\text{DOES.NOT.MATTER}}$  / DEAF OR HEARING OR BLIND  $\overline{\text{DOES.NOT.MATTER}}$   
hs hs  
'To me, it doesn't matter. Deaf, hearing or blind, it doesn't matter.'  
[061-S006]

On the one hand, the negative lexicalizations reported in this section are known to be cross-linguistically common, both in sign languages as well as spoken languages; they represent senses from a limited set of cognitively salient categories such as modal (e.g. MAY.NOT), emotional attitude (WANT.NOT), cognition (NOT.AWARE), and tense / aspectual meanings (NOT.YET) (see Zeshan 2004). On the other hand, NGT displays a cross-linguistically uncommon feature in that there is no general lexicalized negative existential (but see Section 3.2 on the sign NOBODY.HERE). This is unexpected, since negative existentials appear first on the hierarchy of lexicalized negative expressions (Veselinova 2013).

### 3 Non-clausal negation

#### 3.1 Negative replies

There are several ways to give a negative reply to a polar question. First of all, the non-manual headshake by itself is a legitimate negative reply. As for manual options, there is much variation. We attested the following ways to sign ‘no’:

1. A sign identical to the negative particle NOT1 (see Section 2.1), which we gloss here NO1 for the sake of convenience. It is articulated with one or two hands, with the index finger extended, making an outward movement. This movement may be singular, or it may be a bidirectional repeated movement.

2. The sign NO2, where one or two hands have all fingers and thumb extended and make an outward movement. This movement may be singular or it may be a bidirectional repeated movement. In repeated form, it is identical to the prohibitive marker PROH1 (see Section 2.2).
3. The sign NO3, where one hand has the index- and middle-finger extended, as in the manual letter ‘n’, and makes an outward movement; see Figure 14.
4. Sideward fingerspelling of the Dutch word *nee* ('no'), with the hand palm pointing towards the addressee.
5. Fingerspelling of the ‘n’ and a single ‘e’, with palm pointing upwards and the hand moving away from the signer.



Figure 14: The sign NO3.

All these negative replies express negation of the content of a question. Whether they can also be used to negate the polarity of a question is still open for research. As for the distribution of the various signs, it is not known whether manual replies are more frequent than only non-manual replies.

Compared to the six available possibilities for negative replies, the options to provide a positive reply are limited. Here, the options are firstly non-manual through a (repeated) head nod, and secondly manual, either through the very frequently used sign YES1 (Figure 15) or a less common sign, in which the handshape is used and the wrist is flexed (YES2). There is no fingerspelled option, although it must be noted that the handshape in YES1 and YES2 is the result of assimilation of fingerspelling the letters ‘j’ () and ‘a’ (), which form the Dutch word *ja* ('yes').

Thus, the non-manual options for negative and positive replies are both articulated by the head. The manual options, however, are quite different: whereas the negative reply has five different options available, of which three are based



Figure 15: The sign YES1. Video still from the Corpus NGT.

on fingerspelling, the affirmative reply only has two, which both derived from fingerspelling but are conventionalized signs now.

### 3.2 Negative indefinites and quantifiers

There are three main signs which function as negative indefinites in NGT, and which are always accompanied by a headshake. The form glossed as NEG.INDF1, depicted in Figure 16a, is a general negative indefinite and can convey the meanings ‘nothing’, ‘nobody’, ‘never’, and ‘nowhere’. An accompanying mouthing may distinguish between meanings. When used with the meaning ‘nobody’ or ‘nothing’, the sign occurs in argument position, i.e. sentence-initially in the case of a subject, or pre- or postverbally in the case of an object (17a).<sup>6</sup> When used as a negative adverbial, the sign typically comes after the subject but before the predicate (17b).



Figure 16: Three negative indefinites in NGT. Video stills from the Corpus NGT.

<sup>6</sup>The final INDEX (‘there’) in (17a) is signed with the non-dominant hand.

- (17) a. INDEX<sub>a</sub> NEG.INDF1 SEE INDEX  
           ‘He didn’t see anybody there.’ [704-S034]
- hs
- b. INDEX<sub>1</sub> SELF SEE PERSON / INDEX<sub>a</sub> NEG.INDF1 DEAF MEET  
           ‘I once saw a person who had never met a deaf person.’ [062-S005]

The sign NEG.INDF2 (Figure 16b) is a general negative adverbial which may mean ‘nothing’, ‘never’, or ‘nowhere’; again, the mouthing can differentiate more specific meanings. NEG.INDF2 tends to occur before the predicate, although it is also attested in sentence-final position. In the latter case, which often coincides with an increase in the amplitude of the movement of the sign, the adverbial appears to receive emphasis (see Section 4.4 for a discussion of strategies for reinforcing negation).

Another commonly attested negative indefinite sign is NOTHING1 in Figure 16c, which is articulated with the index, middle or ring finger repeatedly being released by the thumb. The sign may occur pre- or postverbally. As noted in Section 2.1, NOTHING1 is sometimes also used as a basic clause negator.

Several other forms, often articulatorily similar to the signs illustrated in Figure 16, are also attested in (variants of) NGT, albeit less frequently. Also recall from Section 2.5 that the sign NOBODY.HERE can be used predicatively with the meaning ‘nobody (is) here’. As such, it can be considered to be an indefinite predicate.

### 3.3 Negative derivation and case marking

NGT does not have case marking, but, unlike many sign languages studied so far, NGT has two derivational manual negative affixes (Klomp 2021). One is a prefix and the other a suffix, and both are loan elements from Dutch. The prefix is glossed as UN- and it is articulated with an index finger on the nose. Although the signed prefix occurs much less frequently than the corresponding Dutch prefix ‘on-’, its use is actually quite similar to the Dutch prefix, meaning that it mainly combines with adjectives, adverbials, and some verbs. There is great variety among signers in using UN- productively – it is frequently used in the Groningen region, but still, some signers do not consider the element really part of NGT, since it is derived from sign-supported Dutch. However, the combination illustrated in Figure 17, which shows the sign UN-DEEP ‘shallow’, was judged to be natural and acceptable by five consultants.



Figure 17: The sign UN-DEEP ‘shallow’. Video stills from the Corpus NGT.

Another case is the negative suffix -LESS (Klomp 2021). This suffix attaches to nouns and changes the word class from noun to adjective/adverbial. It is not used productively, but it occurs in specific lexemes that are loan words from Dutch, such as WORTH-LESS or ROOF-LESS ‘homeless’ (Figure 18).

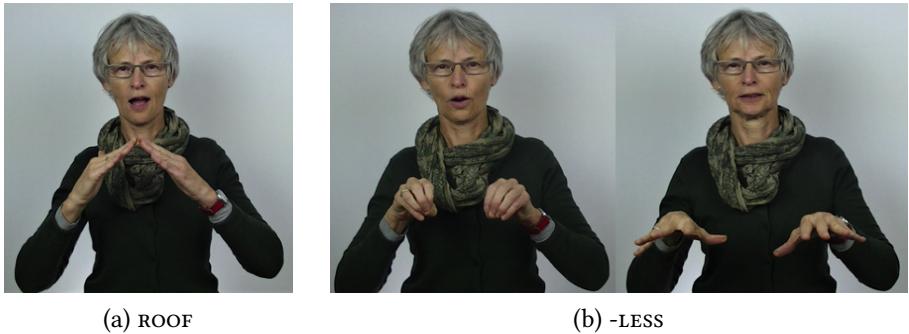


Figure 18: The sign ROOF-LESS ‘homeless’.

Furthermore, the negating headshake could be analyzed as a non-manual affix (as suggested by Pfau 2016), as it attaches to verbs in a systematic and productive way.

### 3.4 Other negative constructions/expressions

We are not aware of any other negative constructions or expressions. There is, for instance, no construction corresponding to English *neither ... nor*. Future (corpus-based) studies, however, might well uncover such expressions.

## 4 Other aspects of negation

### 4.1 The scope of negation

In fact, to date little is known about how NGT realizes constituent negation. Discussions with a consultant, however, suggest that there are two common strategies for narrowing down the scope of negation onto a specific constituent: (i) by overtly marking contrast, and (ii) by topicalizing that constituent. We consider both options in turn.

In the examples in (18), negation semantically scopes over the subject. Note that, following a prosodic break (indicated by '/'), the signer presents a contrasting noun phrase, which is accompanied by an affirmative headnod, thereby clearly narrowing down the scope of negation. Given what we described in Section 2.1, two aspects of this example are noteworthy. First, the non-pronominal subject falls under the scope of the headshake. We have argued above that this is uncommon in standard negation, but it may be characteristic for narrow negation on the subject. Second, in this case, the optional negative particle may precede the subject (18a), which is not attested in standard negation, or follow the subject (18b). However, both these aspects require more systematic research in order to determine in how far they are characteristic for subject negation.

- (18)    a.  $\overline{\text{NOT}} \text{ SISTER}_3 \text{VISIT}_1 / \overline{\text{BROTHER}}$   
               hs                      hn  
       'Not my sister has visited me, but my brother.'  
   b.  $\overline{\text{SISTER}} \text{ (NOT)}_3 \text{VISIT}_1 / \overline{\text{BROTHER}}$   
               hs                      hn  
       'Not my sister has visited me, but my brother.'

Constituent negation involving the object or verb is realized in a similar fashion. In both cases, narrow scope on the object (19a) and narrow scope on the verb (19b), the object and the verb are accompanied by the headshake (in this and the following example, we ignore the manual negator NOT because the options with respect to its clausal position are no different from standard negation, i.e., it can precede or follow the VP). Consequently, it is only the contrastive element (object NP vs. verb) that gives away which constituent is negated – as before, this element is accompanied by a headnod (similar results are reported in van der Kooij et al. 2006: 1606).

- (19)    a.  $\text{INDEX}_1 \overline{\text{VEGETABLES}} \text{ BUY} / \overline{\text{FRUIT}}$   
               hs                      hn  
       'I didn't buy vegetables, but fruit.'

- b. INDEX<sub>3</sub> BOOK BUY / STEAL  
 ‘He didn’t buy the book, he stole it.’

Besides headshake and headnod, the consultant used further specific non-manual markers to signal the contrast: body leans towards opposing sides (e.g. in (19a) slight lean to the right while signing VEGETABLES BUY and slight lean to the left during the articulation of FRUIT) and, sometimes, wide eyes to mark focus (on FRUIT in (19a) and STEAL in (19b)). Thus, it is clear that the realization of constituent negation is supported by non-manuals that are more generally employed to mark contrastive focus (see Crasborn & van der Kooij 2013). As mentioned previously, more research is needed to identify clear patterns with regard to the distribution of non-manual markers in constituent negation.

The second option we identified for marking constituent negation, viz. topicalization, is only available for subjects and objects (and possibly locative/temporal adjuncts), but not for verbs. In this case, the negated constituent – the subject in (20a), the object in (20b) – appears in a clause-initial topic position, where it is marked by a non-manual topic marker, raised eyebrows. In both cases, the topicalized constituent falls outside the scope of the headshake (see (4) in Section 2.1), but still, topicalization signals that the scope of negation is narrowed down to these specific constituents. As in the examples above, the clause may be followed by a contrasted constituent accompanied by headnod, but – depending on the context – this appears optional; that is, topicalization alone may be sufficient to signal constituent negation.

- (20) a. BROTHER 3VISIT<sub>1</sub> / (SISTER)  
 ‘My brother, (he) didn’t visit me (but my sister did.)’
- b. VEGETABLES INDEX<sub>1</sub> BUY / (FRUIT)  
 ‘Vegetables, I didn’t buy (but fruit.)’

## 4.2 Negative polarity

No negative polarity items have been identified in NGT.

## 4.3 Marking of NPs in the scope of negation

As far as we are aware, NPs that appear under the scope of negation do not receive special marking in NGT. As there is no case marking in NGT, no interaction

with negation is possible.

#### 4.4 Reinforcing negation

There are several strategies to reinforce negation in NGT. One such strategy is the repetition of signs, or using several negating signs in combination. An example from our corpus data is shown in (21).

- (21) SOMETIMES NOTHING<sub>2</sub> LANGUAGE ACQUIRED NOTHING<sub>1</sub> ZERO COMMA ZERO  
'Sometimes [they] haven't acquired a language at all, nothing, completely zero.'[254-S013]

In this example, two negative indefinites are used together with the phrase 'zero comma zero', to emphasize a complete lack of language.

Other reinforcing strategies are of a prosodic nature; these can involve both manual and non-manual signals. As for manual emphasis, a sign can be produced larger and/or more tensed (Klomp 2021). Non-manual emphasis is mainly found in the form of squinted eyes, although this non-manual element probably has a more general use for signaling emphasis; this requires further study. In (22), the sign for 'nothing' is marked by squinted eyes, yielding the interpretation 'completely nothing'. The non-manual signals accompanying the sign are illustrated in Figure 19.

- (22) NEVER THINK PREGNANCY DEAF NEVER PU / THINK NOTHING<sub>1</sub> INDEX<sub>1</sub> PU  
'During my pregnancy, I never thought about whether the child would be deaf. I really never thought about it at all.'[2216-S088]

#### 4.5 Negation, coordination and complex clauses

At present, we cannot offer information on specific negation strategies in complex clauses (coordination and subordination) beyond what we have described in previous sections (see Section 2.4). To the best of our knowledge, NGT does not have dedicated negative conjunctions or coordinators (see Section 3.4). Constructions used for contrastive negation have been addressed in Section 4.1.



Figure 19: The sign **NOTHING<sub>1</sub>** from (22) accompanied by squinted eyes.  
Video still from the Corpus NGT.

## 4.6 Other aspects of negation

### 4.6.1 Negative transport

NGT allows negative transport readings with certain predicates. A thorough inventory of neg-raising predicates pends further investigation, but at least **THINK** and **EXPECT** can be counted among them.

Interestingly, there appears to be a qualitative difference between sentences with and without neg-raising predicates. As reported in Section 2.4, the headshake may spread from matrix onto embedded clause in complex constructions (van Gijn 2004). Discussion with two consultants indicates that, crucially, predicate type seems to determine the occurrence of such spreading. More specifically, in negative transport constructions, the headshake may spread over the embedded clause, as in (23a). Narrow spreading over just the matrix clause verb (23b) is also allowed; however, one of the consultants suggested that such constructions have a reading in which the emphasis lies on the matrix clause subject ('I don't think my sister is in love').

- (23)
- a. INDEX<sub>1</sub> THINK / SISTER INDEX<sub>3</sub> IN.LOVE  
‘I don’t think my sister is in love.’ (≈ ‘I think my sister is not in love.’)
  - b. INDEX<sub>1</sub> hs THINK SISTER INDEX<sub>3</sub> IN.LOVE  
‘I don’t think my sister is in love.’ (≈ ‘I think my sister is not in love.’)
  - c. ?? INDEX<sub>1</sub> SAY SISTER INDEX<sub>3</sub> IN.LOVE

‘I didn’t say my sister was in love.’ or ‘I didn’t say my sister was **not** in love.’

- d. INDEX<sub>1</sub> <sup>hs</sup> SAY SISTER INDEX<sub>3</sub> IN.LOVE  
 ‘I didn’t say my sister was in love.’

Wide spreading in constructions with standard complement-taking predicates such as SAY, on the other hand, yields ambiguity between a reading in which the matrix clause is negated and a reading in which both matrix and embedded clause are negated (23c). Moreover, it appears that this ambiguity is partially caused by the fact that there is a strong dispreference in NGT for combining two manual negative markers within a complex sentence. Our consultants indicate that this is perceived as a form of sign-supported Dutch. That is, the latter interpretation would be more appropriate but may be rejected on independent grounds. The preferred way to express matrix clause negation with standard predicates is with narrow scope of the headshake, i.e. limited to just the matrix predicate (23d).

The pattern described above seems to suggest that wide spreading of the headshake with negative transport predicates, as in (23a), serves to signal that the matrix clause negation is interpreted in the embedded clause. As far as we are aware, there are no spoken languages that overtly mark negative transport in any comparable way.

#### 4.6.2 Non-negative uses of negatives and expletive negation

It is interesting to note that one of the markers that is crucial in the expression of standard negation, that is, the headshake, is also occasionally observed in non-negative contexts, for instance to express intensification (i.e., a meaning that could be paraphrased as ‘unbelievable’) or insecurity (e.g., a headshake accompanying a non-negated wh-question). One has to keep in mind, however, that similar uses of the headshake are also attested in spoken languages (McClave 2000; Kendon 2002). Yet, given that in such cases, the headshake appears to be less tightly linked to the syntactic structure of the utterance it accompanies, it is likely that its use is gestural in nature. In contrast, we argued in Section 2.1 that the negative headshake, as used in NGT, is a grammatical marker – or, to put it differently, a grammaticalized gesture (cf. van Loon et al. 2014; Pfau 2015).

#### 4.6.3 Diachronic notes and observations

Given that NGT does not have a written form, diachronic data with considerable time depth are not available, and it is therefore notoriously difficult to make state-

ments about diachronic changes. Still, two points are worth mentioning. First, it is sometimes claimed that the use of the manual negator NOT (see Section 2.1) is more common among older signers, while younger signers prefer headshake-only negation. If this is indeed true, then we might be dealing with a change from a split negation system to a system with a single negative marker (cf. Colloquial French). However, the evidence is mostly anecdotal in nature, and therefore, further research is needed to verify this hypothesis. Second, as mentioned in Section 3.3, at least one of the two derivational affixes we described is considered old-fashioned by some younger signers. These diachronic changes may reflect changes in the influence of spoken Dutch on NGT, possibly as a result of shifts in educational policies (see Klomp 2021). After all, both the use of a negative particle and the use of the negative prefix are characteristic of spoken Dutch.

## 5 Conclusion

The presentation in the previous sections makes clear that NGT, a language in the visual-spatial modality, is not typologically unusual when it comes to the expression of negation. Basically all of the strategies, patterns, and idiosyncrasies we described are also attested in spoken languages, including those compiled in the present volume. In Table 1, we offer an overview of our findings, and we include – to the extent possible – a comparison to spoken languages (for previous attempts at cross-modal comparison, see Pfau (2002; 2015) and Gökgöz (2021)).

Table 1: Forms attested in various types of negative constructions in NGT and cross-modal comparison (negative markers are in bold face).

Negative construction	Forms employed	Cross-modal comparison
Standard negation	<ul style="list-style-type: none"> <li>• Optional use of negative particles <b>NOT1</b>, <b>NOT2</b>, <b>NOTHING1</b>; at least <b>NOT1</b> and <b>NOT2</b> may precede or follow the verb phrase.</li> <li>• Obligatory use of simultaneous non-manual marker (<b>headshake</b>), which accompanies the manual negator (if present) and at least the verb.</li> </ul>	Combination of two elements in standard negation is reminiscent of split negation; cf. French, where one of the two markers is also optional (see discussion below).
Negative imperatives	Negators <b>PROH1</b> and <b>PROH2</b> may appear in negative imperatives, specifically prohibitives, in clause-final position; however, use of these markers is optional.	Reminiscent of languages that do not employ a dedicated strategy for the negation of imperatives.
Stative predicates	Same strategies as described for standard negation; negation of classifier predicates requires further study.	Use of standard negation strategies in stative predicates is common across spoken languages (e.g. English, French).
Non-main clauses	Same strategies as described for standard negation.	Use of standard negation strategies in non-main clauses is common across spoken languages (e.g. English, French).
Negative lexicalizations	Use of negative lexicalizations (cliticized or suppletive forms) for: <ul style="list-style-type: none"> <li>• negative modals (e.g. <b>CAN^NOT</b>, <b>MAY.NOT</b>);</li> <li>• the negative predicate <b>NOT.AWARE</b>;</li> <li>• negative perfective/completive <b>NOT.YET</b>.</li> </ul>	Negative lexicalizations in the domains of modality, cognition, and aspect are cross-linguistically common (but are not attested in Dutch). There is no general lexicalized negative existential, which is cross-linguistically uncommon.

Continued on next page

Table 1 – continued from previous page

Negative construction	Forms employed	Cross-modal comparison
Negative indefinites	<ul style="list-style-type: none"> <li>Multifunctional negative indefinites <b>NEG.INDF1</b> and <b>NEG.INDF2</b>, which can express the meanings ‘nothing, never, nowhere’, and the former also ‘nobody’.</li> <li>Negative indefinite <b>NOTHING1</b> (which is also attested in standard negation – see above).</li> </ul>	While the use of dedicated negative indefinites is common across languages, the multifunctionality of the signs we identified appears cross-linguistically less common.
Negative derivation	Identification of <ul style="list-style-type: none"> <li>negative prefix <b>UN-</b>, which combines with adjectives, adverbials, and verbs;</li> <li>negative suffix <b>-LESS</b>, which combines with nouns.</li> </ul>	Comparable negative derivations are familiar from e.g. various Germanic languages; in fact, the two affixes are loans from Dutch.
Negative transport	Negative transport (NT) is possible with certain cognitive matrix predicates (e.g. <b>THINK</b> , <b>EXPECT</b> ; options for spreading of headshake appear to differ between NT- and non-NT-predicates.	The matrix predicates that allow for NT overlap with those identified for spoken languages (e.g. English); overt marking of NT is, to the best of our knowledge, not attested in spoken languages.

Our comparison in the third column reveals that corresponding patterns exist, and are indeed for the most part common, in spoken languages. One marker that deserves additional attention is the headshake, as its simultaneous articulation with the proposition that is being negated may, at first sight, appear to present us with a modality-specific phenomenon. However, as already mentioned in passing in Section 2.1, it has been suggested that (certain) non-manual markers are suprasegmental in nature and thus function like tone in spoken languages. Just like tone, they may be lexically specified for a lexeme or may function as grammatical morphemes (Yip 2002). This also holds true for the headshake. Split negation involving the combination of a negative particle and a tone change (i.e., a

featural affix) may be rare in spoken languages, but it is attested.<sup>7</sup>

Much work remains to be done in order to identify further negative elements and strategies in NGT, and to disentangle whether certain elements or constructions cannot be negated.

## Glossing conventions and abbreviations

Following common conventions in sign language linguistics, NGT signs are glossed in English words in **SMALL CAPS** that represent the meaning of the sign but provide no information about its form. Most of the negative signs are therefore illustrated in figures by means of video stills; arrows are added when the movement of the hand is important. When two words are necessary to gloss a single sign, we use a period (e.g. COME.ALONG). A carat indicates cliticization, for instance of a negative sign to a modal verb (e.g. CAN^NOT); cliticization is typically characterized by phonological reduction and/or assimilation. The gloss INDEX represents a pointing sign (usually articulated with extended index finger) that fulfills the function of a pronoun. The gloss PU stands for ‘palm-up’, a sign articulated with the palm(s) of the hand(s) facing upwards which has various grammatical and discourse-related functions. A forward slash (‘/’) indicates a clause boundary.

Subscripts that appear on INDEX and certain verbs refer to locations in the signing space: ‘1’ = location close to signer’s body; ‘2’ = location of the addressee; ‘3’ = location in the space in front of the signer (where ‘3a’ is to the right and ‘3b’ to the left). That is, in  ${}_3b$ GIVE.PRESENT ${}_3a$ , the verb sign is articulated with a movement from the left side towards the right side of the signing space.

Lines above the glosses indicate the presence of a non-manual marker that simultaneously accompanies manual signs; the length of the line reflects the scope, i.e. the onset and offset, of the marker. The following abbreviations for non-manuals are relevant in the chapter: ‘hs’ = headshake; ‘hn’ = headnod; ‘fb’ = furrowed eyebrows; ‘re’ = raised eyebrows; ‘sq’ = squinted eyes; ‘tm’ = tensed mouth.

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<sup>7</sup>Note that this line of reasoning is based on the premise that the headshake is a grammaticalized gesture (see Pfau 2015). It is important to emphasize again that the same need not be true for all sign languages that employ headshake in the context of negation (see e.g. Johnston 2018: for Australian Sign Language).

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