A corpus-based study on negation
in Sign Language of the Netherlands

I   Background and goals. Descriptions of sentential negation in a fair number of sign languages (SLs) have revealed an interesting typological distinction: on the one hand, there are 'manual dominant' SLs, which require a manual negative sign in negative clauses; on the other hand, we find 'non-manual dominant' SLs, in which clauses are commonly negated by a non-manual negator (typically a headshake) only (Zeshan 2004; De Vos & Pfau 2015). In addition, the clausal position of the manual negator and the scope of the non-manual marker have been shown to vary among SLs (e.g. Pfau & Quer 2002). This study adds to the picture a detailed description of sentential negation in SL of the Netherlands (NGT) on the basis of naturalistic corpus data. Investigating this type of data, this study being one of the first to do so, adds to our understanding of the range of structural variation attested in the area of SL negation, and allows for verification of results obtained in comparable studies based on elicited data.

II   Methodology. Thirty-five dialogues from the Corpus NGT (Crasborn et al. 2008) were selected for analysis, featuring 22 signers of the Groningen variant of NGT who engage in discussion on a variety of topics. All video clips had previously been annotated for manual articulations in ELAN by the Corpus NGT Team. Also, most video clips included a tier with translations in Dutch. Negative propositions were identified by (i) a systematic search of specific lexical items (e.g. *niet* 'not', *nooit* 'never') on the gloss and translation tiers, and (ii) by going through all 35 video-clips to identify headshake-only examples. In all examples, the scope of the headshake was annotated on a newly introduced tier. The examples were subsequently categorized according to five broad categories, namely clauses including (a) the basic manual negator NOT; (b) a headshake only; (c) the n-word NOTHING, the negative adverbial NEVER, or the negative completive NOT-YET; (d) a modal verb; and (e) Negative Concord. Only categories (a) and (b) will be addressed in this talk; these were further classified according to word order, i.e. relative position of subject, object, and verb, as well as the position of NOT in category (a).

III   Results. The corpus search yielded 120 examples of categories (a) and (b). 49 of these include the basic clause negator NOT, while 71 are negated by a headshake only. It is important to note that negated clauses in both these categories show considerable variation in word order patterns, although (i) the subject usually occurs in clause-initial position, and (ii) NOT, if present, predominantly occupies a clause-final position. The basic position of the object is difficult to determine, as (i) the majority of the examples does not include an overt object argument, and (ii) almost equally as many clauses show an (S)-O-V order as an (S)-V-O order. Yet, since previous research has argued for a basic SOV word order in NGT (Coerts 1994; Pfau & Bos 2008; Brunelli 2011), and the data do not immediately contradict this claim, this word order is taken to be the basic one. On this assumption, 59% of the clauses with NOT is compatible with an S-O-V-Neg order, and 27% with an S-Neg-O-V order. Note that the different positions for NOT do not imply a semantic difference. Of the clauses with a headshake only, 57 (80%) do not contradict an S-O-V word order; 13 examples (18%) demonstrate an (S)-V-O word order. Table 1 indicates the scope of the headshake for these four most common word orders by listing the frequency of headshake marking of subject, object, verb, and NOT. Several observations with regard to the scope of the non-manual negator can be made. First, all the negated sentences include a headshake, regardless of whether NOT is present. Second, NOT is always accompanied by a headshake. Third, the verb almost always falls under the scope of the non-manual negator. Fourth, subjects are less frequently accompanied by a headshake, and if they are, they are almost always pronominal pointing signs. Finally, objects are almost always accompanied by a

headshake when occupying a post-verbal position, but less frequently so when they appear pre-verbally. In addition, objects accompanied by a headshake are often non-pronominal, in contrast with non-manually marked subjects.

Table 1. Frequency of headshake marking of S, O, V, and NOT (if present) in the most common word orders.

Clauses with NOT	S	O	V	Neg
(S)-(O)-V-Neg	26% (5/19)	33% (1/3)	90% (26/29)	100% (29/29)
(S)-Neg-(O)-V	25% (2/8)	100% (1/1)	92% (12/13)	100% (13/13)
Total	26% (7/27)	50% (2/4)	90% (38/42)	100% (42/42)
Clauses without NOT	S	O	V	
(S)-(O)-V	31% (12/39)	55% (6/11)	96% (55/57)[a]	
(S)-V-O	33% (4/12)	92% (12/13)	100% (13/13)	
Total	31% (16/51)	75% (18/24)	97% (68/70)	

[a] In both cases without marking, 'hs' accompanies a sentence-final pronoun copy and discourse marker PALM-UP.

IV. Discussion and typological comparison. The corpus data provide convincing evidence that NGT is a non-manual dominant language, in accordance with Coerts (1992), who investigated semi-spontaneous data, but in contrast with Van Gijn (2004), who concluded from elicited data that NOT is never used in NGT. The patterns we identified are also of typological interest. With regard to word order, NGT displays variation with respect to the position of NOT, unlike other SLs with SOV word order, including German SL, Catalan SL (both Pfau & Quer 2002), Italian SL (Geraci 2005), and Turkish SL (Gökgöz 2011). Only American SL – an SVO language – shows a similar pattern, with the basic order being S-Neg-VP, and S-VP-Neg being derived by VP-movement or topicalization (Fischer 2006). NGT thus presents us with the mirror image: S-VP-Neg is the most frequent word order, followed by S-Neg-VP. We are currently investigating whether (a) displacement of NOT to a VP-adjoined position, or (b) extraposition of the VP might be at play in deriving the S-Neg-VP order. With regard to scope of the headshake, we suggest that NGT patterns similar to German SL (Pfau 2002, 2008), with the headshake being lexically specified for NOT but attaching to the verb as a featural affix, i.e. a non-manual (suprasegmental) morpheme, given that the verb is almost always accompanied by the negative non-manual. NGT patterns like German SL and Catalan SL in that it allows optional spreading of the headshake over the object (although it seems objects in post-verbal position are obligatorily marked by a headshake), while (non-pronominal) subjects usually fall outside the scope of the headshake.

V. Conclusions. In conclusion, analysis of spontaneous corpus data suggests that NGT shows a fair amount of variation with regard to negative clauses. This goes in particular for the variable position of NOT, as well as variation in spreading patterns of the headshake, most notably with regard to object marking. These observations may serve as point of departure for future syntactic analysis of negation in NGT. Previous studies on negation in other SLs have described less intra-language variation than what is reported here for NGT, however, these studies are largely based on elicited data. The current investigation thus adds to our understanding of the extent of variation possible within one particular SL. In addition, the data suggest that NGT patterns differently from other SLs, thus offering better insight into the typological variation attested in the domain of negation.

VI. Selected references.
Coerts, Jane. 1992. *Nonmanual grammatical markers: An analysis of interrogatives, negations and topicalisations in Sign Language of the Netherlands.* PhD dissertation, University of Amsterdam. **Pfau, Roland & Josep Quer.** 2002. V-to-Neg raising and negative concord in three sign languages. *Rivista di Grammatica Generativa* 27:73-86. **Zeshan, Ulrike.** 2004. Hand, head, and face: Negative constructions in sign languages. *Linguistic Typology* 8, 1-58.