

The grammar of headshake: Microvariation in sign language negation

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1 Introduction¹

- The realization of sentential negation has been described in some detail for a fair number of sign languages (SLs); for cross-linguistic studies see e.g. Pfau (2002), Pfau & Quer (2002), Zeshan (2004, 2006a).
- Striking similarities: in all SLs investigated to date, a manual Neg element (a Neg sign) is combined with a non-manual marking (a head movement), and in most of them, the manual Neg sign is optional, i.e. the non-manual is sufficient to negate a proposition.
- On closer inspection, however, it turns out that these similarities are superficial ones. The exact distribution of the non-manual marker as well as the combination of manual and non-manual marker are subject to language-specific constraints.
- GOAL: Relate language-specific patterns of negative marking in SLs to differences in the phrase structure, more specifically, to the positioning of the manual and non-manual marker in the head and specifier of NegP.

2 Grammatical vs. affective uses of non-manuals

- As for headshakes (hs), they are also used in the hearing population (McClave 2001; Kendon 2002). Interestingly, they do not only accompany or intensify negated utterances ((1a). Rather, headshakes may also signal uncertainty ((1b); McClave 2001:61) or may serve to intensify affirmative sentences ((1c); McClave 2000:873).

- (1) a. _____hs
Oh, no no, I didn't tell her!
- b. _____hs
Where is he going?
- c. _____hs
what I needed to do was uh to clean it and uh (pause) it was real bad

- It has been shown that signers use lateral headshakes for similar reasons, that is, for signaling uncertainty ((2a); Vogt-Svendsen 1990, cited in Zeshan 2004:20) and intensification ((2b); McClave 2001:57).

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On the handout, the following abbreviations for sign languages are used:

ASL: American Sign Language	LIS: Italian Sign Language
CSL: Chinese Sign Language	<i>(Lingua Italiana dei Segni)</i>
DGS: German Sign Language <i>(Deutsche Gebärdensprache)</i>	LSC: Catalan Sign Language <i>(Llengua de Signes Catalana)</i>
GSL: Greek Sign Language	TİD: Turkish Sign Language
HKSL: Hong Kong Sign Language	<i>(Türk İşaret Dili)</i>

- (2) a. $\overline{\hspace{1.5cm}}_{\text{hs}}$ BEFORE SCHOOL WHERE INDEX₂ [Norwegian SL]
 ‘Where did you go to school?’²
- b. $\overline{\hspace{1.5cm}}_{\text{hs}}$ WOW SHOW-UP MANY [ASL]
 ‘Wow! Many (non-handed signs) showed up.’

- In addition to these affective uses, in SLs, non-manual markers (NMMs), such as eyebrow position, mouth, head and body movements, serve an important linguistic function (Liddell 1980; Baker-Shenk 1983; Boyes Braem & Sutton-Spence 2001).
- On the syntactic level, such NMMs serve to distinguish sentence types (e.g. wh-questions, yes/no-questions, imperatives, conditionals, relative clauses), to mark negation and affirmation, and they accompany topicalized and focused constituents. Different NMMs may sequentially and simultaneously combine with each other (Wilbur 2000; Pfau 2006).
- Crucially, the use, distribution, and acquisition of these syntactic NMMs are clearly distinct from that of affective head movements (Reilly & Anderson 2002).
- First, the scope and timing of the NMMs is linguistically constrained relative to the manual sign(s) they accompany in a way that gestural/affective markers are not. Second, as far as headshakes are concerned, it is impossible to negate a spoken sentence by headshake only, while the same is possible in many SLs (see below).
- Moreover, the two types of facial expressions – linguistic vs. affective – are processed differently (Corina 1989; Atkinson et al. 2003) and they can be selectively impaired (Corina et al. 1999).

3 Non-manual dominant sign languages

- Zeshan (2006b) distinguishes two types of SLs: those with non-manual dominant systems of negation and those with manual dominant systems of negation (see section 4).
- In non-manual dominant systems, the NMM is obligatory while the manual clause negator is optional; cf. the minimal pair from Flemish SL in (3) (van Herreweghe & Vermeerbergen 2006:242).

- (3) a. $\overline{\hspace{1.5cm}}_{\text{neg}}$ NOW GAME NOT START [Flemish SL]
- b. $\overline{\hspace{1.5cm}}_{\text{neg}}$ NOW GAME START [Flemish SL]
 ‘The game does not start now.’

- In the remainder of this section, I will first focus on a comparison of sentential negation in Catalan SL (LSC), German SL (DGS), and ASL, as first reported in Pfau & Quer (2002, in press), before turning to Chinese SL (CSL).

² SL examples are glossed in small caps. The following notational conventions are used.

₁SIGN₃ Subscript numbers indicate points in space used in verbal agreement and pronominalization.
 SIGN++ indicates reduplication of a sign to express grammatical features such as plural or aspect.
 SIGN^SIGN indicates the combination of two signs, e.g. cliticization or compounding.
 SIGN-SIGN indicates that two words are needed to gloss a single sign.

Lines above the glosses indicate the scope (i.e. onset and offset) of a particular non-manual marker, e.g. negation (neg), question (q), and topicalization (t).

→ In ASL, the headshake **must** spread onto the object DP when no manual Neg sign is present (8a). In contrast to that, spreading of the NMM is optional in LSC and DGS (8bc).

- (8) a. neg
 JOHN BUY HOUSE [ASL]
- b. neg
 SANTI MEAT EAT [LSC]
- c. neg
 POSS₁ MOTHER FLOWER BUY [DGS]

→ Spreading of the headshake is clearly restricted by the phrase structure in that it must target entire constituents (Pfau 2002); cf. the ungrammaticality of (9).

- (9) a. * POSS₁ MOTHER RED FLOWER BUY [DGS]
 ‘My mother doesn’t buy a read flower.’
- b. * YESTERDAY INDEX₁ POSS₁ FRIEND MEET [DGS]
 ‘I didn’t meet my friend yesterday.’

→ In DGS and LSC, non-pronominal subjects are usually outside of the spreading domain of the headshake.

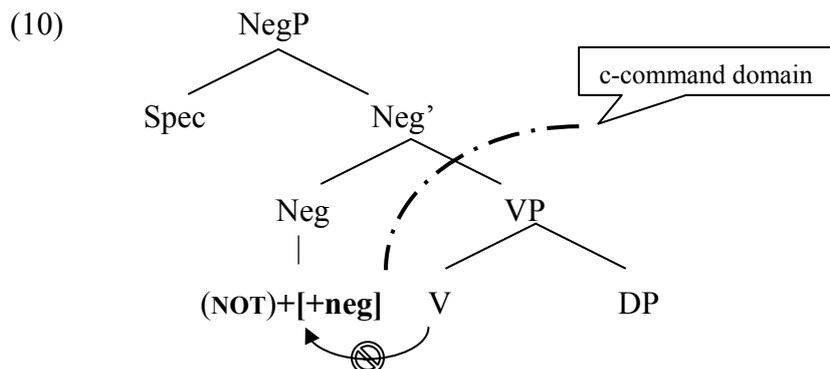
3.2 Analysis

→ In this section, I am going to show how the grammaticality patterns can be accounted for by assuming that the manual and non-manual Neg elements occupy different positions within NegP in the three sign languages.

3.2.1 American Sign Language

→ In (10) I give the relevant part of the ASL clause structure as proposed by Neidle et al. (2000). The authors assume that NOT as well as a syntactic [+neg]-feature which is realized by the headshake occupy the head of NegP.

→ Note that in all structures, I neglect the position of TnsP which, according to Zanuttini (1997) and Cinque (1999), may sit above or below NegP. The former has been argued for for ASL, the latter for DGS, LSC, and LIS.



- In ASL, the verb never raises to Neg°. When NOT is present, the headshake can associate with NOT and therefore headshake on NOT only is grammatical (11a).
- In the absence of NOT, the feature [+neg] has no manual material to be articulated with and is therefore forced to spread over its entire c-command domain; cf. the contrast between (11b) and (11c).

- (11) a. JOHN [_{NegP} [_{Neg} NOT] [_{VP} BUY HOUSE]] [ASL]
 b. * JOHN [_{NegP} [_{Neg} +neg] [_{VP} BUY HOUSE]]
 c. JOHN [_{NegP} [_{Neg} +neg] [_{VP} BUY HOUSE]]

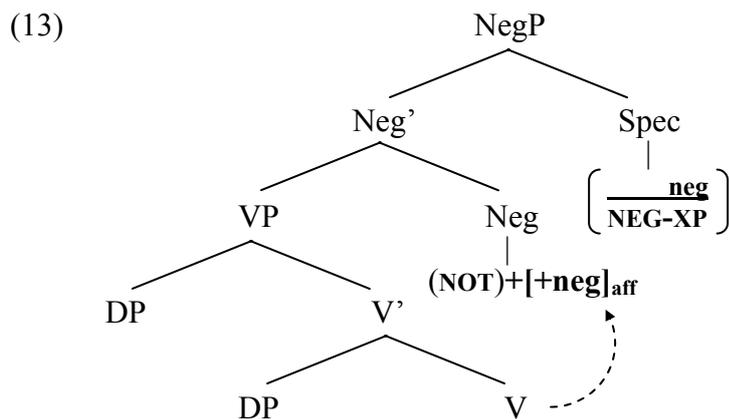
- In compliance with the NEG-criterion (Haegeman & Zanuttini 1991; Haegeman 1995), the head Neg° hosting [+neg] must be in a Spec-head configuration with a negative operator. Consequently, I assume the presence of an empty negative operator in SpecNegP.
- According to Wood (1999:19ff), movement of the entire VP to SpecNegP is possible in ASL, leading to a structure with the manual element NOT in sentence-final position (12).

- (12) MARY [_{NegP} [_{SpecNegP} BREAK FAN] [_{Neg} NOT] t_{VP}] [ASL]

- For further discussion of negation in ASL (e.g. negative modals) see Veinberg & Wilbur (1990), Wood (1999), Shaffer (2002), Fischer (2006).

3.2.2 Catalan Sign Language

- Things are quite similar in LSC: as in ASL, Neg° hosts the negative sign NOT as well as the feature [+neg]. The LSC clause structure is given in (13) (Quer 2002).



- A crucial difference, however, concerns the status of [+neg]. In LSC, [+neg] is a featural affix (Akinlabi 1996). When NOT is present, [+neg] will be affixed to NOT (14a).
- In the absence of NOT, V-to-Neg raising is triggered due to the Stray Affix Filter. The featural affix attaches to the verb and consequently, headshake on the verb sign only is grammatical in LSC (14b).

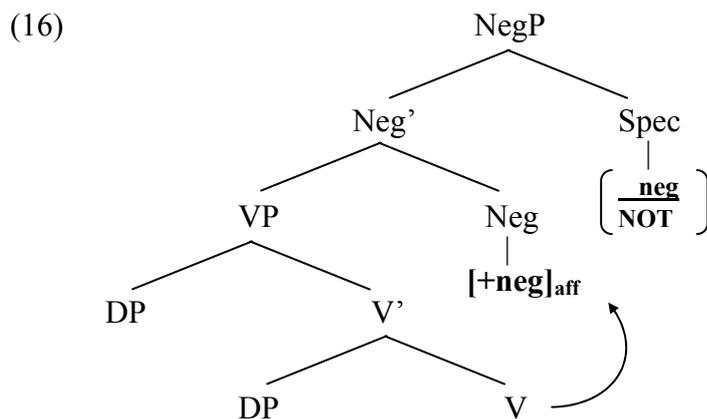
- (14) a. SANTI [_{NegP} [_{VP} MEAT EAT] [_{Neg} NOT]] [LSC]
 b. SANTI [_{NegP} [_{VP} MEAT tv] [_{Neg} EAT]]

→ Consequently, ASL and LSC are similar to each other with respect to the positioning of the manual and non-manual negative element within NegP, but they differ with respect to the character of the [+neg]-feature which is syntactic in ASL but morphological in LSC.
 → In LSC, SpecNegP may be occupied by an overt negative operator such as NO-RES or NEVER (15ab); these negative XPs must follow the verb (15c). Furthermore, LSC allows for negative concord (15d), with the negative XP following NOT (note that the headshake associated with adjacent manual signs is realized continuously).

- (15) a. INDEX₁ [_{NegP} [_{VP} tv] [_{Neg} SMOKE] [_{SpecNegP} NO-RES]] [LSC]
 ‘I haven’t smoked (at all).’
 b. BERTA [_{NegP} [_{VP} VEGETABLES tv] [_{Neg} EAT] [_{SpecNegP} NEVER]]
 ‘Berta never eats vegetables.’
 c. * INDEX₁ NO-RES/NEVER SMOKE
 d. INDEX₁ SMOKE NOT NO-RES/NEVER

3.2.3 German Sign Language

→ DGS differs from both ASL and LSC with respect to the positioning of the negative elements within NegP, but it patterns with LSC as far as the morphological/affixal nature of [+neg] is concerned; cf. the structure in (16) (Pfau 2002).



→ In contrast to ASL and LSC, the manual Neg sign NOT occupies SpecNegP in DGS; this sign is lexically specified for a headshake.
 → Just as in LSC, [+neg] is affixal in nature. But since the manual sign occupies SpecNegP in DGS, the verb must always raise to Neg in order to pick up the Neg-affix. Consequently, (17a) where verb raising has not applied is ungrammatical.
 → In (17bc) verb movement to Neg has applied and [+neg] has been affixed. Note that when NOT is signed (17b), the headshake on the verb and the Neg sign is continuous.

- (17) a. * MOTHER [_{NegP} [_{VP} FLOWER BUY] [_{Neg} +neg] [_{SpecNegP} NOT]] [DGS]
 b. MOTHER [_{NegP} [_{VP} FLOWER t_V] [_{Neg} BUY] [_{SpecNegP} NOT]]
 c. MOTHER [_{NegP} [_{VP} BLUME t_V] [_{Neg} BUY] [_{SpecNegP} Ø]]

- In other words: DGS is the only one of the three SLs which shows split negation, i.e. the only one where the two Neg elements involved occupy different positions within NegP.
 → In contrast to LSC, negative concord, i.e. doubling of manual Neg elements, is impossible in DGS, irrespective of order (18).

- (18) * ROLAND BEER DRINK NOT NEVER [DGS]
 ‘Roland never drinks beer.’

- Note that I assume that, at least in LSC and DGS, headshake, just like other NMMs (Sandler 1999), is a prosodic phenomenon and that spreading of headshake is confined to prosodic domains.

3.3 Chinese Sign Language

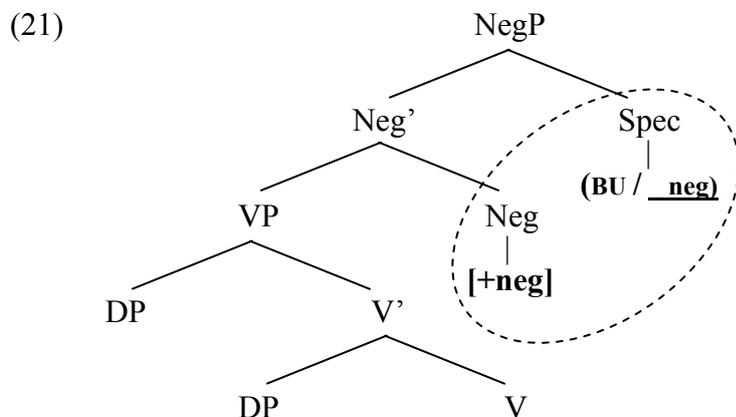
- Although CLS also appears to have a non-manual dominant system, the realization of sentential negation looks quite different from ASL, DGS, and LSC.
 → The most frequent NMM in CSL negation is not a headshake but a negative facial expression (nfe) (19a); this NMM is capable of spreading (19b) (Yang & Fischer 2002).

- (19) a. LEAVES SHAPES COMPLEX MATTER [CSL]
 ‘No matter how complex these leaves appear ...’
 b. INDEX₃ DISLIKE SEE BU [CSL]
 ‘I don’t like to watch it.’

- Headshake is attested but it never co-occurs with manual signs (20a). Rather, it follows the manual signs (20b). Moreover, the headshake is in complementary distribution with the manual negator, a negative handwave glossed as BU (20c).

- (20) a. * INDEX₃ LIKE [CSL]
 ‘I don’t like it.’
 b. LOOK-AFTER DEAF[^]STUDENTS A-LOT, HEARING TEACHER [CSL]
 ‘(Deaf teachers) take care of deaf students a lot, hearing teachers don’t.’
 c. UNDERSTAND vs. UNDERSTAND[^]BU [CSL]
 ‘I don’t understand.’

→ Based on this distribution, I suggest that the negative facial expression is the realization of [+neg] in Neg°. In contrast to the SLs discussed above, in CSL, the headshake is an independent lexical item which competes with BU for the position SpecNegP (21). In any case, [+neg] associates with material in SpecNegP (and optionally spreads).



3.4 Summary

- In all the above SLs, sentential negation is expressed by the combination of an optional manual Neg sign with an obligatory NMM. However, the syntactic position of the manual sign as well as the nature and the distribution of the NMM differ from SL to SL.
- In ASL, LSC & DGS the NMM is a headshake. Only in ASL and LSC can the headshake be associated with the Neg sign only, only in LSC and DGS can it be associated with the verb sign only. In CSL, the NMM is a negative facial expression while the headshake is optional and in complementary distribution with the manual negator.
- The observed differences can be accounted for by assuming (i) that the manual Neg elements occupy different positions within NegP and (ii) that the feature [+neg] which is realized by a NMM may have different phonological and morphological characteristics.
- Other SLs showing comparable patterns: SL of the Netherlands (van Gijn 2004), Indopakistani SL (Zeshan 2000), Swedish SL (Bergman 1995), Israeli SL (Meir 2004).

4 Manual dominant sign languages

- Generally, in manual dominant SLs, the manual negative sign is not optional, i.e. a sentence cannot be negated by headshake only, and the NMM tends to accompany the manual sign only (Zeshan 2006b).
- In this section, I will consider sentential negation in Italian SL (LIS), Hong Kong SL (HKSL), and Turkish SL (TİD).

4.1 Italian Sign Language

- Just like DGS and LSC, LIS is a SOV-language with manual negative signs usually following the verb. In contrast to DGS and LSC, however, sentential negation cannot be expressed by a NMM only, irrespective of spreading domain (22a). Moreover, the NMM occurs only with the sentence-final negative sign (22b) (Geraci 2005).

- (29) a. KNOW FACE INDEX_3 , WHERE REMEMBER [GSL]
 ‘I know his face, but I don’t remember where from.’
 neg
- b. INDEX_1 AGAIN GO NOT-B [GSL]
 ‘I won’t go (there) again.’
 neg-tilt

5 Conclusion

- Although the use of manual and non-manual markers in the expression of sentential negation has been observed in all SLs investigated to date, the patterns of distribution and co-occurrence of these markers clearly differ from SL to SL.
- Broadly, two systems have to be distinguished: non-manual dominant systems and manual dominant systems. In the former, it is possible to negate a clause by means of a NMM only while in the latter, the use of a manual negator is obligatory.
- But even within the two systems, SLs differ from each other. ASL, LSC, DGS, and CSL all have non-manual dominant systems but differ with respect to what manual elements (if any) the headshake can/must accompany and the possibility of negative concord.
- LIS, HKSL, and TID have manual dominant systems. It appears that these SLs are more similar to each other with respect to the distribution of the NMM; still, they differ when it comes to the possibility of negative concord.
- I have suggested that the observed differences can be accounted for when we assume that the manual and non-manual elements occupy different positions within NegP and that the (non)affixal status of the NMM is subject to parametrization.

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