Negation in Sadat Tawaher Sign Language: A Formal Approach

BACKGROUND. The realization of clausal negation has received considerable attention in sign language (SL) research; it has been shown that all SLs employ manual and non-manual markers of negation but differ in how they combine the two types of markers **[2,7,12]**. Here we analyze negation in *Sadat Tawaher Sign Language* (STSL), which emerged naturally ~60 years ago within a family in a southwestern Iranian village named Sadat Tawaher after a man lost his hearing. STSL has basic SVO order but allows SOV/OSV orders.

METHOD. We collected signed sentence productions and story-telling data from six native STSL signers (4♂, 2♀, aged 27–54), consisting of 1172 negative clauses, which were annotated in ELAN and analyzed for presence/position of manual negator(s) and presence/scope of non-manual marker(s) (NMMs). Furthermore, we conducted grammaticality judgments with two signers.

RESULTS. We identified five manual negators, namely, $\text{NEG}_{\text{basic}}$, NEG_{proh}, NEG_{poss}, $\text{NEG}_{\text{exist}}$, and $\text{NEG}_{\text{other}}$, of which the negator with open-5-handshape was distributionally the basic clause negator ($\text{NEG}_{\text{basic}}$; Fig. 1). Other negators encode additional semantics (e.g., prohibition, possession). Each negator features a manual and a non-manual component, the latter including backward head-tilt (bht), headshake (hs), and brow raise. The data reveal that (i) the manual negator (NEG) is in strict clause-final position (=SVO-Neg (1a)) – crucially, this is different from the surrounding Arabic dialect, where a verbal prefix encodes negation (=S-Neg-VO); (ii) NEG is obligatory, while the NMM is optional – in fact, in most clauses, NEG was the only negator (1b); negating a clause with only a NMM was judged as ungrammatical, (3); (iii) when present, the NMM accompanies only NEG (1a) and never spreads onto adjacent signs (2). This clearly shows that in STSL, the manual negator is more important than the NMMs (cf. **[1]** for Italian SL & **[13]** for Turkish SL).

ANALYSIS. We argue that the NMM is a lexically specified component of NEG; i.e., not an independent negative marker, and thus cannot negate a clause on its own (which is possible in other SLs). NEG and the NMM (if present) occupy the head of NegP, while the specifier of NegP is a covert negative operator $Op\neg$, in a spec-head relation with NEG for feature-checking purposes **[5,10,11]**, see Fig. 2. Since NEG is always present (3), and lexically specified for a NMM, spreading – e.g., over the c-command domain of Neg^0, as proposed for ASL **[4]** – is not allowed (cf. 2). We assume that NMM optionality results from phonological deletion (akin to schwa-deletion in spoken languages **[8]**).

The data further reveal that STSL features an optional non-standard Negative Concord (NC) system serving an emphatic purpose only (4 & 5) (cf. **[6]** for Georgian SL and spoken languages, **[9]** for SL of the Netherlands). This implies that the first manual negator in the NC construction realizes sentential negation while the other manual negator(s) are negative adverbials which either occupy SpecNegP, thus replacing $Op\neg$, or are adjoined to NegP or another maximal projection.

CONCLUSION. STSL is a unique manual communication system, as it emerged within a family; still, it cannot be classified as homesign (as it was developed with a late-deafened adult rather than around a child). Within a rather short period, it developed negation strategies that are clearly independent of the surrounding spoken language and can be accounted for within a modality-independent formalization. Like recently emerging Nicaraguan SL, grammaticalization from a gesture system into formalized syntax does not appear to take very long **[3]**.

Examples & Figures:

(1) a. BROTHER DRINK TEA $\overset{\text{bht}}{\text{NEG}_{\text{basic}}}$

b. BROTHER DRINK TEA $\text{NEG}_{\text{basic}}$

'My brother does not drink tea.'

(2) * BROTHER DRINK TEA $\overset{(\quad)\ (\quad)\ \text{bht}}{\text{NEG}_{\text{basic}}}$

(3) a. * BROTHER DRINK TEA $\overset{(\quad)\ (\quad)\ \text{bht}}{}$

b. * BROTHER DRINK TEA $\overset{\text{bht}}{}$

(4) MOTHER MEAN $\text{NEG}_{\text{basic}}$ $\overset{\text{hs}}{\text{NEG}_{\text{proh}}}$

'His mother wasn't mean *at all*.'

(5) MONEY NEG_{poss} $\text{NEG}_{\text{exist}}$ $\overset{\text{hs}}{\text{NEG}_{\text{proh}}}$

'He had no money whatsoever!'

Note: The parentheses in (2/3a) indicate that the clause is ungrammatical independent of the scope of the NMM.

'The people did not harvest the rice.'

Figure 1. Negative clause with clause-final $\text{NEG}_{\text{basic}}$

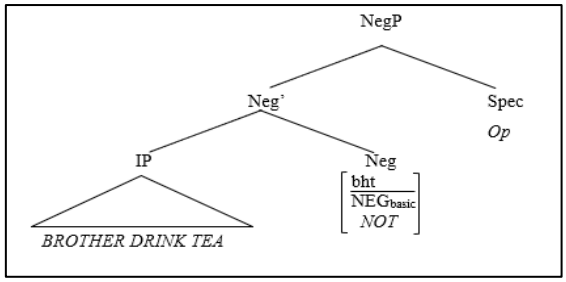

Figure 2. Projection of NegP & spec-head relation

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