

On the syntax of negation and modals in LSC and DGS

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1 Introduction¹

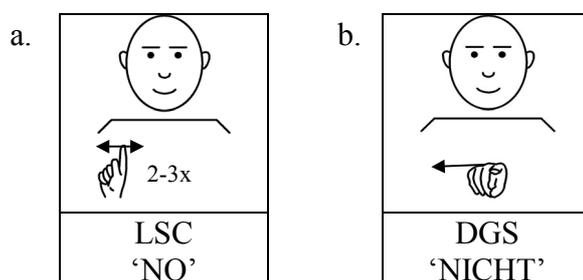
- Sentential negation has been described for a number of (genetically unrelated) sign languages (SLs). Striking similarities: in all these SLs, a manual Neg element (a Neg sign) is combined with a non-manual marking (a head movement), and in most of them, the manual Neg sign is optional, i.e. the non-manual alone is sufficient to negate a proposition (cf. Zeshan 2002 for an overview).
- In all these SLs, the non-manual element is a side-to-side headshake. Moreover, in Greek SL, Turkish SL, and Jordanian SL a backwards head tilt is also observed in negative contexts (Antzakas 2002; Zeshan 2003; Hendriks, this conference).
- Crucially, the headshake which finds use in SL negation is not just an affective expression but rather an integral part of the grammar of SLs. Its use, distribution, and acquisition are clearly distinct from that of affective head movements (Reilly & Anderson 2002). Moreover, the two types of facial expressions – linguistic vs. affective – are processed differently and can be selectively impaired (Corina et al. 1999).
- Sign languages to be considered in this talk: Catalan Sign Language (*Llengua de Signes Catalana*: LSC) and German Sign Language (*Deutsche Gebärdensprache*: DGS).

2 Sentential negation in LSC and DGS

2.1 Distribution of the non-manual marker

- In LSC and DGS, the underlying word order is SOV (Quer 2002; Pfau & Glück 2000; Rathmann 2000) and the manual Neg signs (cf. (1ab)) follow the verb.

(1) *Manual negation markers used in the two SLs*



- The examples in (2) illustrate that in both sign languages, it is not possible to negate a sentence by a manual Neg sign only.

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- Note that we assume that the non-manual marker acts as an intonational contour whose distribution is determined by intonational phrases (Sandler 1999; Lillo-Martin 2001).
- Also note that according to Neidle et al. (2000), ASL differs from LSC and DGS in that it allows headshake on the manual Neg sign NOT only (just like LSC) but does not allow headshake on the verb sign only in the absence of NOT (in contrast to LSC and DGS); for a comparison of ASL with LSC and DGS see Pfau 2002 and Pfau & Quer 2003.
- Summary: In LSC and DGS, sentential negation is expressed by an optional manual sign and an obligatory non-manual marker. Headshake on the manual Neg sign only is grammatical in LSC but ungrammatical in DGS, while headshake on the verb sign only (in the absence of a manual Neg sign) is grammatical in both sign languages.

2.2 Negative concord (NC)

- Negative concord: two (or more) negative elements coappear in a sentence, without changing the negative interpretation of the sentence (in contrast to “double negation”).
- Two types of NC must be distinguished (Quer 2002):
- NC between the nonmanual component and the negative manual sign (as above);
 - NC between a manual negation sign (NO, NICHT) and other manual negative XPs; this type of NC is only attested for LSC.
- Negative XPs are typically non-argumental in LSC. The examples in (6) show that negative XPs – such as NO-RES ‘NEG’, MAI ‘never’, EN-ABSOLUT ‘at all’ – must follow the verb; consequently, (6bd) are ungrammatical. Note that the headshake associated with adjacent manual signs is realized continuously.

(6) Overt negative operators in NC structures in LSC

- a. INDEX₁ $\overline{\hspace{1cm}}$ hs $\overline{\hspace{1cm}}$ hs
 I smoke.NEG NEG
 ‘I haven’t smoked (at all).’
- b. * INDEX₁ $\overline{\hspace{1cm}}$ hs $\overline{\hspace{1cm}}$ hs
 NO-RES FUMAR
- c. BERTA VERDURA $\overline{\hspace{1cm}}$ hs $\overline{\hspace{1cm}}$ hs
 Berta vegetables eat.NEG never
 ‘Berta never eats vegetables.’
- d. * BERTA VERDURA $\overline{\hspace{1cm}}$ hs $\overline{\hspace{1cm}}$ hs
 MAI MENJAR

- Whenever the negative sign NO is present, other negative XPs need to follow NO (7ab). If NO-RES and MAI are combined, then MAI has to follow NO-RES (7cd).

(7) Distributional evidence for the position of negative XPs in LSC

- a. INDEX₁ FUMAR $\overline{\hspace{1cm}}$ hs $\overline{\hspace{1cm}}$ hs
 I smoke not never / NEG
 ‘I have never smoked / have not smoked at all.’

b. * INDEX₁ FUMAR $\frac{\hspace{1cm}}{\hspace{1cm}} \frac{\hspace{1cm}}{\hspace{1cm}} \frac{\hspace{1cm}}{\hspace{1cm}} \frac{\hspace{1cm}}{\hspace{1cm}}$ MAI / NO-RES NO

c. INDEX₁ $\frac{\hspace{1cm}}{\hspace{1cm}}$ FUMAR $\frac{\hspace{1cm}}{\hspace{1cm}}$ NO-RES $\frac{\hspace{1cm}}{\hspace{1cm}}$ MAI
I smoke.NEG NEG never
 ‘I have never smoked (at all).’

d. * INDEX₁ $\frac{\hspace{1cm}}{\hspace{1cm}}$ FUMAR $\frac{\hspace{1cm}}{\hspace{1cm}}$ MAI $\frac{\hspace{1cm}}{\hspace{1cm}}$ NO-RES

→ In contrast to that, in DGS, doubling of manual Neg elements as in (8) is not possible, irrespective of order.

(8) No cooccurrence of negative manual signs in DGS

* ROLAND BIER $\frac{\hspace{1cm}}{\hspace{1cm}}$ TRINK $\frac{\hspace{1cm}}{\hspace{1cm}}$ NICHT $\frac{\hspace{1cm}}{\hspace{1cm}}$ NIE
Roland beer drink.NEG not never
 ‘Roland never drinks beer.’

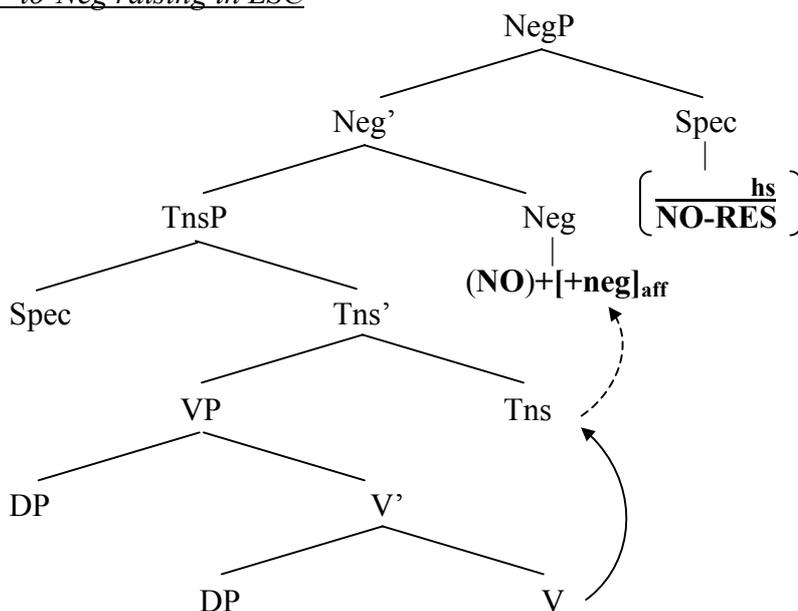
2.3 Analysis

→ Following standard assumptions (Pollock 1989; Ouhalla 1990), we assume the projection of a negative phrase (NegP) which makes available two positions for negative elements: the head position Neg° as well a specifier position which may host negative XPs.

→ In this section, we are 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 two languages.

→ In LSC, Neg° hosts the negative sign NO as well as the affix [+neg] which gets realized as the negative headshake. The LSC clause structure is given in (9) (Quer 2002).

(9) V-to-Neg raising in LSC

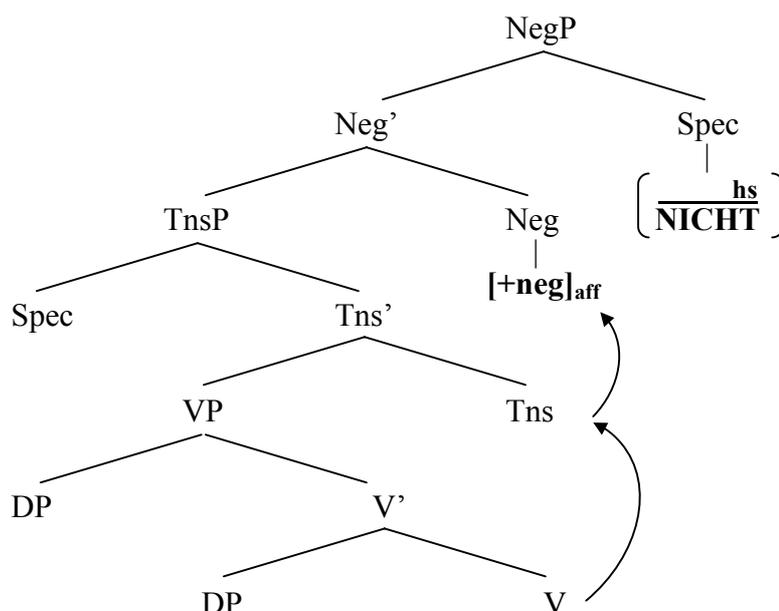


- We assume that [+neg] in LSC is a featural affix (Akinlabi 1996), comparable to tonal affixes in spoken languages. When NO is present, [+neg] will be affixed to NO (10a).
- Whenever NO is not present, V-to-Neg raising is triggered by the Stray Affix Filter (Baker 1988). The featural affix attaches to the verb and consequently, headshake on the verb sign only is grammatical in LSC (10b).
- 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. This may be an empty negative operator, as in (10ab), or an overt operator such as NO-RES (10c).
- In addition, adjunction to NegP is argued to be possible for negative adverbs such as MAI. This explains why MAI has to follow NO-RES (7c). Note that they are certainly not adjoined to CP, as they appear to the left of a sentence-final wh-phrase (Quer 2002).

(10) Position of the headshake in LSC

- a. SANTI [_{NegP} [_{VP} CARN MENJAR] [_{Neg} NO^{hs}] [_{SpecNegP} Op]]
- b. SANTI [_{NegP} [_{VP} CARN t_V] [_{Neg} MENJAR^{hs}] [_{SpecNegP} Op]]
- c. SANTI [_{NegP} [_{VP} CARN t_V] [_{Neg} MENJAR^{hs}] [_{SpecNegP} NO-RES^{hs}]]

- DGS differs from LSC with respect to the positioning of the negative elements within NegP, but it patterns with LSC as far as the affixal nature of [+neg] is concerned.
- In contrast to LSC, the manual Neg sign NICHT occupies SpecNegP in DGS, this sign being lexically specified for a headshake; cf. the structure in (11) (Pfau 2002).

(11) V-to-Neg raising in DGS

- 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, (12a) where verb raising has not applied is ungrammatical.

→ In (12bc), verb movement to Neg has applied and [+neg] has been affixed. Note that when NICHT is signed (12b), the headshake on the verb and the Neg sign is continuous.

(12) *Position of the headshake in DGS*

- a. * MUTTER [NegP [VP BLUME KAUF] [Neg +neg] [SpecNegP $\overline{\hspace{1cm}}$ NICHT]]
- b. MUTTER [NegP [VP BLUME t_V] [Neg [v $\overline{\hspace{1cm}}$ KAUF]] [SpecNegP $\overline{\hspace{1cm}}$ NICHT]]
- c. MUTTER [NegP [VP BLUME t_V] [Neg [v $\overline{\hspace{1cm}}$ KAUF]] [SpecNegP Op]]

- In contrast to LSC, DGS does not allow for the cooccurrence of two negative manual signs with a negative concord reading (8). This should either derive from a ban on adjunction to NegP or from the properties of the alleged negative XP.
- Note that Neg selects TnsP as its complement in LSC and DGS. This is actually one of the two options allowed by the fine-grained functional structure as assumed in Zanuttini (1997) and Cinque (1999). ASL has been claimed to choose the other option: Tns selecting NegP (Wood 1999; Neidle et al. 2000).
- The above examples and structures make clear that LSC and DGS show negative concord in the sense that two Neg elements – a particle and an affix – may be combined without changing the polarity of the sentence back to affirmative. Only LSC, however, allows for NC in the sense that two manual negative signs can be combined.

3 Negative modals in LSC and DGS

3.1 Modal verbs as functional elements

- Modal verbs are standardly analyzed as auxiliary predicates taking lexical verbs as their (infinitival) complements. In this sense, they must be viewed as functional elements (“functional restructuring verbs” in the sense of Wurmbrand, in press).
- Cinque (1999, 2001) proposes a fine-grained hierarchy of various modal heads in the functional domain that host modals according to their semantic interpretation (epistemic, necessity, possibility, obligation, ability, permission, etc.).
- Since Ross (1969), the semantic distinction between epistemic modals and root modals has been argued to have a correlate in the syntax: an epistemic modal has the basic properties of a raising verb (no θ -role assigned to its subject), while a root modal patterns with a control verb (thematic subject controlling a PRO in the complement); cf. Zubizarreta 1982, Roberts 1985, Picallo 1990 for different implementations.
- Wurmbrand (1999), though, rejects such a distinction of epistemic and root modals in syntactic terms and argues for a unified analysis of modal verbs as raising predicates. Due to lack of evidence to the contrary, we uniformly generate modal verbs in Tns.

3.2 On the distribution of negative modals

- As is well-known, negation closely interacts with modal predicates, giving rise to systematic lexicalization patterns (de Haan 1997; van der Auwera 2001).

- In Tamil, a Dravidian language of India and Sri Lanka, sentential negation is marked by the negative suffix *-le*. However, there are special negative modal auxiliaries which are detached from the verb. For instance, *muṭiyum* expresses (physical) ability while *muṭiyaatu* expresses inability (13ab) (Asher 1982:77).
- In Babungo, a Bantu language spoken in Cameroon, ability is expressed by the sentence initial auxiliary *kà* ‘can’ (13c), while the sentence-final auxiliary *didū* expresses inability (13d) (Schaub 1985:228). Note that usually, sentential negation is expressed by a double particle construction *kèe ... mē* (Schaub 1985:91).

(13) Negative modals in Tamil (b) and Babungo (d)

- | | |
|---|--|
| <p>a. Ennaale atu ceyya muṭiyum
<i>I.INSTR that do.INF can</i>
‘I can do that.’</p> <p>c. <i>kà</i>’ ηwə gántə ghə
<i>can he help.PRES you</i>
‘He can help you.’</p> | <p>b. Ennaale atu ceyya muṭiyaatu
<i>I.INSTR that do.INF cannot</i>
‘I can’t do that.’</p> <p>d. ηwə nyu didū
<i>he run.PRES cannot</i>
‘He cannot run.’</p> |
|---|--|

- SLs also lexicalize the merger of a modal with negation either as a result of negative compounding (e.g. DARF[^]NEG ‘may not’ in DGS) or by means of a suppletive separate lexical item (e.g. PODER-NO ‘can not’ in LSC), see the examples in (14) (cf. Shaffer (2002) and Janzen & Shaffer (2002) for ASL).

(14) Position of negative modals in DGS and LSC

- | | |
|--|--------------|
| <p>a. GARTEN INDEX₃ KIND⁺⁺ SPIEL $\frac{\hspace{1cm}}{\hspace{1cm}}$ DARF[^]NEG
<i>garden index child.PL play may.NEG</i>
‘The children may not play in the garden.’</p> <p>b. SPIEL INDEX_{3a} INDEX₂ ₂ERKLÄR₁ $\frac{\hspace{1cm}}{\hspace{1cm}}$ MUSS[^]NEG(2h)
<i>game index you AGR.S.explain.AGR.O need.NEG</i>
‘You don’t have to explain the game to me.’</p> | <p>(DGS)</p> |
| <p>c. JARDÍ INDEX₃ NEN⁺⁺⁺ JUGAR $\frac{\hspace{1cm}}{\hspace{1cm}}$ PROHIBIT
<i>garden index child.PL play forbidden</i>
‘The children are not allowed to play in the garden.’</p> <p>d. ÚLTIM INDEX₁ DORMIR $\frac{\hspace{1cm}}{\hspace{1cm}}$ PODER-NO
<i>last index sleep can. NEG</i>
‘Lately I can’t sleep.’</p> | <p>(LSC)</p> |

- As expected, in DGS sentences containing modals cannot be negated by means of the manual Neg sign NICHT only, since – just like lexical verbs - the modal has to raise to Neg in order to combine with the negative affix (15a).
- In LSC, modals behave differently from lexical verbs in that they obligatorily raise to Neg. Unlike lexical verbs (10a), modals in LSC cannot be negated by the negative particle NO only (15b).

(15) Ban on combination of modals with manual Neg sign

- a. * GARTEN INDEX₃ KIND++ SPIEL DARF ^{hs}NICHT (DGS)
garden index child.PL play may not
 ‘The children may not play in the garden.’
- b. * INDEX₁ XINÈS LLEGIR PODER ^{hs}NO (LSC)
index Chinese read can not
 ‘I can’t read Chinese.’

→ We assume that this distribution is due to the fact that modals obligatorily raise to Neg as an intermediate step towards the head of a higher functional projection FP. Consequently, modals in LSC cannot combine with the manual Neg sign NO, since NO would block head-to-head movement of the modal to F.

→ However, it also turns out that in neither of the two SLs, it is possible to negate a modal by a headshake only (16) – again in contrast to lexical verbs; cf. (10b) and (12c).

(16) Modals cannot be negated by headshake only

- a. * GARTEN INDEX₃ KIND++ SPIEL ^{hs}DARF (DGS)
garden index child.PL play may.NEG
- b. * INDEX₁ XINÈS LLEGIR ^{hs}PODER (LSC)
index Chinese read can.NEG

→ Rather, in both SLs, the use of a negative modal (as in (14)) is obligatory, be it a compounded or a suppletive form (note that for ASL it has been claimed that the use of a negative modal is not obligatory, cf. Neidle et al (2000:79f)).

→ Moreover, in both SLs, negative modals, unlike main verbs, cannot cooccur with a negative XP in SpecNegP (NO-RES in LSC or NICHT in DGS); cf. (17ab). Marginally, in LSC such cases yield a marked double negation reading. As expected, in LSC it is also impossible for the negative modal to cooccur with NO (17c).

(17) Ban on combination of negative modals with manual Neg signs

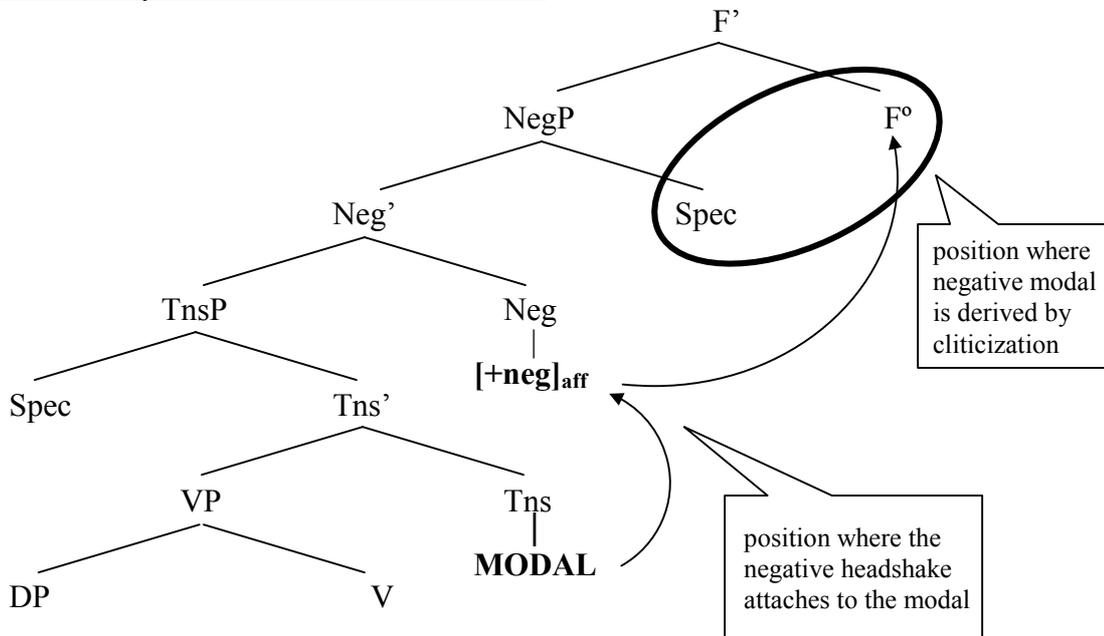
- a. * AHIR INDEX₁ VENIR ^{hs}PODER-NO ^{hs}NO-RES (LSC)
yesterday I come can.NEG NEG
 ‘Yesterday I wasn’t able to come.’
- b. * KIND EIS ESS ^{hs}DARF^NEG ^{hs}NICHT (DGS)
child ice eat may.not.NEG not
 ‘The child may not eat icecream.’

			<u>hs</u>	<u>hs</u>		
c. *	INDEX ₁	XINÈS	LLEGIR	PODER-NO	NO	(LSC)
	<i>index</i>	<i>Chinese</i>	<i>read</i>	<i>can.NEG</i>	<i>not</i>	
	'I can't read Chinese.'					

3.3 Analysis

- As mentioned before, we assume that modals obligatorily raise to the head of a higher functional projection FP. On their way up they have to pass through Neg due to the Head Movement Constraint (Travis 1984).
- We propose that once the modal is in F, SpecNegP obligatorily cliticizes to the modal (as assumed by Cinque (1999) for combinations of *non* and V in Italian). As a consequence of this cliticization process, negative modals cannot cooccur with negative XPs in SpecCP and adjunction of a negative XP to NegP is no longer possible in LSC.

(18) Movement of modal verbs in LSC and DGS



- We speculatively propose that the higher head where the negative modal ends up might be either a Focus-related projection or the C head endowed with a [+focus]-feature (in line with Petronio & Lillo-Martin's (1997) proposal concerning ASL modal doubling).
- Summary: It turns out that w.r.t. modals the two SLs pattern alike. Modals can neither be negated by a manual sign only nor by headshake only (nor by a combination of the two). Rather, in both SLs, the use of a special negative modal is obligatory. These negative modals cannot combine with any manual Neg signs.
- Following the common assumption that modals are base-generated in Tns, negative modals in DGS and LSC are argued to undergo Tns-to-Neg movement in order to support the unbound negative morpheme [+neg]. From there they move further to a higher functional head where SpecNegP obligatorily cliticizes to the modal.

5. Conclusions

- In both SLs investigated, sentential negation is expressed by the combination of an optional manual Neg sign with an obligatory non-manual marker, viz. a headshake.
- In both SLs, the manual Neg sign follows the verb, but the distribution of the headshake differs: only in LSC can the headshake be associated with the Neg sign only. In the absence of the manual Neg sign, in both SLs the headshake can be articulated with the verb sign only.
- Interestingly, w.r.t. modals the two SLs pattern alike. In negative contexts, the use of negative modals is obligatory. These cannot combine with any manual Neg signs.
- The observed differences and similarities can be accounted for by assuming that a) the Neg elements (negative particle and negative affix) occupy different positions within NegP, b) that languages differ as to whether they allow a negative XPs to be adjoined to NegP, giving rise to NC readings, and c) that, unlike negated lexical verbs, modals undergo obligatory further movement to a higher functional head.
- In **LSC** Neg^o hosts affixal [+neg] and NO; in **DGS** Neg^o hosts affixal [+neg] while NICHT occupies the specifier of NegP. Adjunction to NegP of a negative XP is allowed in LSC but not in DGS. In both SLs, negative modals are incompatible with negative XPs due to cliticization of SpecNegP to the immediately higher functional head to which the negative modal has moved.

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