

Restructuring and the Scope of Negation in Hindi-Urdu

Introduction

For a class of infinitival clauses in Hindi-Urdu, we find a puzzling state of affairs with negation: a negation which seems to be inside an infinitival complement has effects typical of a matrix negation, e.g. NPI licensing in the matrix:

- (1) Seemingly embedded negation licenses a matrix NPI:
ek=bhii laṛke=ne Mina=kii madad nahī: kar-nii caah-ii
one=even boy=ERG Mina=GEN.F help.F NEG do-INF.F want-PFV.F
‘Not even a single boy wanted to help Mina.’

The marker *nahī:* in (1) immediately precedes the embedded verb, and thus occupies the position where embedded negation is expected to surface. And yet, paradoxically, a subject NPI is licensed in the matrix: we call this the ‘exceptional behavior’ of negation.

In this article, we show that restructuring infinitives (and only them) allow for verb movement out of them: the infinitival V moves into the matrix and forms a cluster with the main verb. This movement makes the negative marker appear to belong to the embedded clause, when in fact it is in the matrix, and behaves as a matrix negation (in terms of scope and other tests).

Our treatment of the scope of negation in infinitival clauses reveals a landscape that is similar to the one identified in the literature on restructuring infinitives in Germanic. Our derivation of the exceptional behavior of negation implicates cluster formation, which is only possible with restructuring infinitives. But restructuring infinitives do not require cluster formation as shown by the fact that Long Distance Agreement, a restructuring diagnostic, is possible even when cluster formation is not possible. Keine and Bhatt (2016) show that *in situ* German long passives involve obligatory cluster formation (also see Haider 1993, 2010, 2003) but that cluster formation is not essential to long passives, a point originally made by Wurmbrand (2001). We have also identified differences between cluster formation in Hindi-Urdu and German – Keine and Bhatt (2016) argued that the cluster formation operation in the long passive is semantically contentful but we show that the cluster formation operation that we propose for Hindi-Urdu is semantically vacuous. In addition, unlike German where cluster formation is obligatory when possible, this operation in Hindi-Urdu is optional.

This article has the following structure. As background for the explanation of the exceptional behavior of negation, we investigate the location of sentential negation

in the Hindi-Urdu clause, and determine that rightward V movement to the negative marker happens in simplex clauses (Section 1). In Section 2, we show that the exceptional behavior requires restructuring. We then propose that restructuring allows the infinitival verb to move into the matrix, where it forms a cluster with the main verb (Section 3): this cluster moves to the right of the matrix negative marker, thus deriving a surface order which falsely suggests an embedded negation; in this section we also discuss the implications of the optionality of verb clustering for the theory of restructuring. Section 4 examines the exceptional behavior of negation under the alternative hypothesis that the negative marker in Hindi-Urdu is distinct from the actual negation, a covert morpheme; we argue against this hypothesis, which renders verb clustering unnecessary or unobservable. Finally, we compare verb clustering in Hindi-Urdu and its equivalent in German (Section 5).

1 Background on negation in Hindi-Urdu

In this section, we provide a partial description of negation in Hindi-Urdu. We make a new claim about its height: we argue that it is higher than the canonical surface position of subjects. We also show that the negative marker *nahĩ*-, if negative, sits to the right of V (in agreement with Kumar (2006)).

1.1 Surface position of the negative marker

The presence of negation is marked by *nahĩ*-, which appears in almost all environments.¹ The marker *nahĩ*- appears as part of the verb sequence. The most normal position for it is the immediately pre-verbal one but post-verbal negation is also possible:

- (2) a. *nahĩ*: V Aux: default
Ram=ne seb nahĩ: khaa-yaa thaa
Ram=ERG apple.M NEG eat-PFV.MSG be.PST.MSG
‘Ram had not eaten the apple/apples.’
- b. V *nahĩ*: Aux: more emphatic, contrastive reading easily available
Ram=ne seb khaa-yaa nahĩ: thaa, (sirf
Ram-ERG apple.M eat-PFV.MSG NEG be.PST.MSG only
su:ngħ-aa thaa)
smell-PFV.MSG be.PST.MSG
‘Ram hadn’t eaten the apple(, he had merely smelled it.)’
- c. V Aux *nahĩ*:- denial
Ram=ne seb khaa-yaa thaa nahĩ:
Ram=ERG apple.M eat-PFV.MSG be.PST NEG
‘Ram had NOT eaten the apple/apples (I don’t know why you are saying that he had...).’

In the unmarked ‘*nahĩ*: V’ order, adjacency is required between *nahĩ*:- and V (Kumar 2006:92 makes the same point):

¹Prohibitives are an exception: these require the special form *mat*. There is also *naa*, which is limited to non-restructuring infinitives and subjunctives.

- (3) Ram=ne seb tab nahī: khaayaa thaa
 Ram=ERG apple then NEG eat.PFV be.PST
'Ram hadn't eaten an apple then.'
- (4) Violation of adjacency by *tab* 'then':
 *Ram=ne seb nahī: tab khaayaa thaa
 Ram=ERG apple NEG then eat.PFV be.PST
 Intended: *'Ram hadn't eaten an apple then.'*

There can be only one negation in a simplex clause. For example the following '*nahī*: V *nahī*: Aux' order is out or quite odd:

- (5) **nahī*: V *nahī*: Aux
 */#Ram=ne seb nahī: khaa-yaa nahī: thaa
 Ram=ERG apple.M NEG eat-PFV.MSG NEG be.PST.MSG
 Intended: *'Ram had (not) eaten the apple/apples.'*

1.2 Sentential negation

There are at least two hallmarks of sentential negation in Hindi-Urdu, auxiliary deletion and subject NPI licensing. The former can be used specifically to detect a clausemate negation (while subject NPIs can be licensed by a superordinate negation, and are thus not a direct test for clausemate negation).

Auxiliary deletion Ordinarily the progressive and habitual participles in Hindi-Urdu require auxiliaries to form complete free-standing clauses; this is in contrast to the perfective participle which can stand on its own.

- (6) Progressive:
 Ram seb khaa rahaa *(hai/thaa/hogaa)
 Ram apple eat PROG.MSG be.PRS/be.PST/be.PST
'Ram is/was/must_{epistemic} be eating apples.'
- (7) Habitual:
 Ram seb khaa-taa *(hai/thaa/hogaa)
 Ram apple eat-HAB.MSG be.PRS/be.PST/be.PST
'Ram eats/used to eat/must_{epistemic} eat apples.'

However, in the presence of negation, the auxiliary can go missing. The resulting structure is interpreted as having present tense specification:²

- (8) Progressive:
 Ram seb nahī: khaa rahaa
 Ram apple NEG eat PROG.MSG
'Ram is not eating apples.'
- (9) Habitual:

²A freestanding habitual participle can also be interpreted as a past habitual in certain contexts. Therefore in this paper we focus on the (un)availability of a present tense reading in the absence of an auxiliary.

Ram seb nahī: khaa-taa
 Ram apple NEG eat-HAB.MSG
'Ram does not eat apples.'

We refer to this pattern as ‘auxiliary deletion’ (originally described by Bhatia (1978), and also discussed in Nevins and Anand 2003, Bhatt 2005:772, Bhatt and Keine 2017). In the above examples, the absence of the auxiliary has no impact on anything else — everything else stays the same. This is not always the case. For example when the subject has 3FPL features, the absence of the auxiliary changes the form of the participle. See Bhatt and Keine 2017 for details.

NPI licensing Sentential negation in Hindi-Urdu licenses both subject and object NPIs, and it also licenses (under some conditions) NPIs in subordinate clauses (for an in-depth study of NPIs in Hindi-Urdu, see Lahiri 1998):

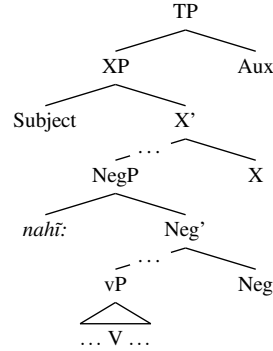
- (10) Subject NPI:
 ek=bhii larke=ne seb nahī: khaa-yaa
 one=even boy=ERG apple.M NEG eat-PFV.MSG
'Not even a single boy ate apples.'
- (11) Object NPI:
 Ram=ne ek=bhii seb nahī: khaa-yaa
 Ram=ERG one=even apple.M NEG eat-PFV.MSG
'Ram did not eat even a single apple.'

1.3 The position of sentential negation

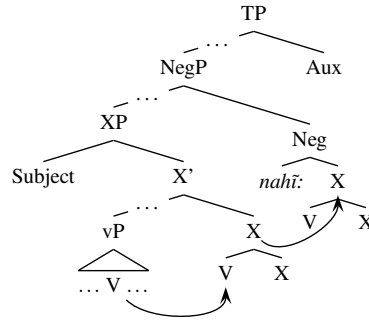
1.3.1 Using scope to determine the height of sentential negation

Where is negation in the hierarchical structure of the clause? It is not possible to answer this question simply judging by the immediately pre-verbal surface position of the negative marker *nahī:* (Mahajan 1990b, Kumar 2006). It could be low, maybe as low as the immediate periphery of vP, if it is attached to the left of VP, or potentially high, if it is attached to the right of VP and V right head-moves to it (or over it), as in Kumar 2006 (we provisionally place the subject in some Specifier below T; it could also be in Spec,TP).

- (12) Low left-attachment:



(13) Potentially high right-attachment, with rightwards V movement:



This tree has *nahĩ:* as the head of NegP,³ rather than as a phrase in the specifier of NegP. There are two main reasons for this choice: the existence of non-clausal right specifiers in the language is dubious or controversial and, in the unmarked order at least, *nahĩ:* has to be adjacent to V (4).⁴

Can we determine the position of sentential negation (abbreviated as ‘NEG’) in Hindi-Urdu? First of all, note that we assume for the time being that NEG and the marker *nahĩ:* are one and the same. In principle, we could also entertain the hypothesis that the marker *nahĩ:* is not semantically negative; under this view, sentential negation would be a covert morpheme, which co-occurs with a semantically non-negative overt morpheme (see Section 4). This hypothesis is not, in our view, the default one: it is *a priori* preferable, for reasons of economy, to derive the scope of sentential negation without resorting to a covert morpheme.

(14) **Assumption:** The negative marker *nahĩ:* is semantically negative.

We will question this assumption in Section 4.

³Note that some heads are missing in our tree, e.g. Asp. And we are not certain that V doesn’t head-move higher than Neg. Another decision is worth mentioning, which is justified by the key observation discussed in this article (§2.2.1 and §3): we show head-movement to the right of *nahĩ:* and head-movement to the left of all other heads, as required by the observed surface order.

⁴Kumar (2006) also has *nahĩ:* attached to the right of VP, with V moving to it; his choice rests primarily on the strict adjacency requirement between the negative marker and the verb; we provide additional evidence for his claim, based on scope facts.

To answer the question about the height of NEG, we will not rely on the surface position of the marker *nahĩ:*, but only on scope relations. We claim that we can work out the relative position of NEG with respect to the canonical position of subjects in Hindi-Urdu, assuming that it has only one position in the clause (we made the same argument in our Author & Author 2018). Since it licenses subject NPIs (as well as object NPIs) (10), we already know that NEG is above the lowest position where a subject NPI can be interpreted, which might be a reconstructed position.

Now, this doesn't tell us where NEG is relative to the *canonical surface position* of subjects in Hindi-Urdu. But we can, using a semantically fixed point, the adverb *hameshaa* 'always', construct a configuration that will help us adjudicate the case. We say that *hameshaa* is a fixed point because adverbs are not believed to raise or lower covertly. Note first that sentential negation preferentially takes scope over *hameshaa* (and other adverbs), i.e. preferentially occupies a higher position; the adverb has two positions, one above NEG and one below NEG; the lower position of the adverb *hameshaa*, below NEG, is marginally available:⁵

- (15) Ram=ne hameshaa mehnat nahĩ: ki:
 Ram=ERG always handwork.F NEG do.PFV.F
 'Ram did not work hard all the time.'
 easy: NEG>>ALWAYS; marginally available: ALWAYS>>NEG

A notable result of the observation of the scope of negation relative to the fixed point *hameshaa* is that, under the assumption that *nahĩ:* is NEG (14), the constituency in (12), with a low left-adjoined *nahĩ*, is not compatible with the wide scope of negation over the preceding adverb, unlike the constituency shown in (13). We can thus write:

- (16) *nahĩ:* is negative \Rightarrow *nahĩ:* is right-attached
 Equivalently: *nahĩ:* is left-attached \Rightarrow *nahĩ:* is not negative

To create the configuration that we need in order to locate NEG w.r.t. subjects, we only have to replace the non-polarized subject with a subject NPI, *ek=bhi: laṛke=ne* 'any boy':

- (17) NPI...*hameshaa*...*nahĩ:*
 ek=bhi: laṛke=ne hameshaa mehnat nahĩ: ki:
 one=even boy=ERG always handwork.F NEG do.PFV.F
 'Not even one boy worked hard all the time.'
 NEG>>ANY>>ALWAYS
 *ALWAYS>>NEG>>ANY

⁵Note that in English too the two scope relations exist, but they are transparently read off of surface order:

- (i) a. John doesn't always vote.
 b. John always doesn't vote.

(17) only has a reading where NEG outscopes the adverb: this is obviously an effect of the presence of the NPI.⁶ If NEG is below the canonical position of subjects in Hindi-Urdu, then the subject NPI needs to reconstruct below it in order to be licensed: this reconstruction is a relatively short one, since it doesn't bring the NPI lower than the adverb (we only get a NEG>>ANY>>ALWAYS reading, with an adverb in its low position, below NEG): if reconstruction to the base position were required, the NPI would be anti-licensed, due to the intervention effect of the adverb (strong scalar terms like *every*, *necessarily*, and *always* are interveners in English and so are their equivalents in Hindi-Urdu⁷). We mark the canonical position of subjects as 'Spec,XP':

(18) Surface: [_{XP} NPI_I [_X X ... NEG ... t₁ ... hameshaa ... [_{VP} t₁ ...]]]

(19) After *short* reconstruction:

[_{XP} [_X X ... NEG ... NPI_I ... hameshaa ... [_{VP} t₁ ...]]]

The unavailability of the ALWAYS>>NEG>>ANY reading is surprising if NEG is below the canonical subject position: we could imagine the adverb being in its high position and the subject undergoing short reconstruction under NEG, as shown in (21):

(20) Surface: [_{XP} NPI_I [_X X ... hameshaa ... NEG ... t₁ ... [_{VP} t₁ ...]]]

(21) *After *short* reconstruction:

[_{XP} [_X X ... hameshaa ... NEG ... NPI_I ... [_{VP} t₁ ...]]]

The curious consequence that short reconstruction of the subject is possible with a low *hameshaa* and impossible with a high *hameshaa* makes the hypothesis that NEG sits below the canonical subject position implausible.

A more coherent picture follows from the alternative hypothesis, according to which NEG sits above the canonical subject position. The NPI doesn't need to reconstruct for licensing: we can straightforwardly account for the availability of the NEG>>ANY>>ALWAYS reading:

(22) Surface: [... NEG ... [_{XP} NPI_I [_X X ... hameshaa ... [_{VP} t₁ ...]]]]

⁶ To show that the putative ALWAYS>>NEG>>ANY (equivalent to 'no boy ever worked hard') is missing, we construct a dialogue that can only be coherent if the reading is available. B's response in the following discourse is deviant, showing that (17) lacks the reading in question:

- (i) A: ek=bhi: larke=ne hameshaa mehnat nahī: ki:
B: #You're exactly right, no boy ever worked hard.

⁷(ii) is an example of intervention in Hindi-Urdu:

- (i) har larke=ne Sita=se baat nahī: ki:
every boy=ERG Sita=with talk NEG do.PFV.F
'Every boy didn't talk to Sita.' EVERY>>NEG; NEG>>EVERY
- (ii) har larke=ne ek=bhi: larke:=se baat nahī: ki:
every boy=ERG one=also girl=with talk NEG do.PFV.F
'Every boy talked to no girl.' EVERY>>NEG>>ANY; *NEG>>EVERY>>ANY

Hameshaa follows the NPI on the surface and thus cannot be in its high position (under the high NEG hypothesis, NEG is above the NPI on the surface). Since adverbs do not move covertly, we correctly expect the ALWAYS≫NEG≫ANY reading to be impossible (QR of adverbs is undocumented, as far as we can tell).

We draw two conclusions from the investigation of the semantic scope of negation. (i) Whether Assumption (14) is correct or not (i.e. whether NEG is *nahĩ*: or not), NEG must sit higher than the canonical surface position of subjects (of course, subjects can scramble past this position). Furthermore, (ii) if Assumption (14) is correct, i.e. the negative marker is indeed semantically negative, then it must be attached to the right of VP, since it can outscope preceding adverbs and subjects in their canonical position (but surfaces after them), with the verb head-moving to it so as to derive the surface order '*nahĩ*: V' (as shown in (13)).

Since NEG is above the canonical position of subjects, this canonical position is probably not Spec,TP: auxiliaries are ordered after *nahĩ*: on the surface, and are thus higher than negation under the assumption that *nahĩ*: is negative; if we assume that auxiliaries are in T, then the canonical position of subjects should be lower than T. Note that the adjacency between V and Aux can be broken, by an object for example, unlike the adjacency between *nahĩ*: and V, suggesting that Aux need not form a morphological complex with V.

1.3.2 Explaining DP intervention

Regardless of whether *nahĩ*: is negative or not, we can show that rightward verb movement to *nahĩ*: can, together with an assumption about postverbal XPs, explain the following contrast observed by Mahajan (1990b):⁸

- (23) S V O Aux:
 Ram khaa-taa sabzii thaa
 Ram eat-HAB.MSG vegetable.F be.PST.MSG
 'Ram used to eat vegetables.'
- (24) S *nahĩ*: V O Aux: ???
 ???Ram nahĩ: khaa-taa sabzii thaa
 Ram NEG eat-HAB.MSG vegetable.F be.PST.MSG
 Intended: 'Ram didn't used to eat vegetables.'

Moving an object between V and Aux is only possible in a positive sentence. If the displaced object appears after the auxiliary, the resulting structure is acceptable with and without negation:

- (25) S *nahĩ*: V Aux O:
 Ram (nahĩ:) khaa-taa thaa sabzii
 Ram NEG eat-HAB.MSG be.PST.MSG vegetable.F
 'Ram (didn't) used to eat vegetables.'

⁸Mahajan's (1990b) own account of the intervention fact differs from ours. Mahajan argues that negation needs to raise at LF in order to c-command the subject NPI; the right-scrambled object adjoins to AgrP and creates a barrier for movement; as a result, the NPI is not licensed.

Note that the displaced object breaks up the verbal sequence in (24) but not in (25). Regarding postverbal XPs, we follow a line of work by Mahajan (1990a, 1997) and Bhatt and Dayal (2007) which derives these orders not by rightward movement of the XP but by movement of a verbal projection. Specifically, we assume leftward remnant VP movement. To simplify the exposition, we will just show the movement of the verb and suppress the remnant that is plausibly moving.

$$(26) \quad S \ V \ O \ Aux \leftarrow S \ V_i \ O \ t_i \ Aux$$

Assume that to derive the ‘*nahĩ*: V’ order, the verb needs to move to *nahĩ*: (or maybe to a head to the right of *nahĩ*:).

$$(27) \quad S \ O \ nahĩ: \ V \ Aux \leftarrow S \ O \ t_i] \ nahĩ: \ V_i \ Aux$$

To allow a DP to intervene between the participle and the auxiliary requires fronting of the participle. The fronting of the participle bleeds the in-situ configuration from which head movement can apply.

In sum, we have established the following: sentential negation is higher than the canonical position of subjects in Hindi-Urdu (Section 1.3.1). If the assumption that *nahĩ*: is negative is correct, then it is right-attached (because it outscopes subjects in their canonical position and preceding adverbs), therefore V right-moves to it:

- (28) (i) *nahĩ*: is negative \Rightarrow *nahĩ*: is right-attached
(ii) *nahĩ*: is right-attached \Rightarrow V right-moves to *nahĩ*:
 \therefore *nahĩ*: is negative \Rightarrow V right-moves to *nahĩ*: (Transitivity of \Rightarrow)

This right movement of V to *nahĩ*: seems to be a good prediction, since it can help explain DP intervention facts (24) (Section 1.3.2).

In the next section, we discuss the exceptional behavior of seemingly embedded negation described in the Introduction: we show that this behavior only obtains in restructuring environments.

2 Negation with complementation

2.1 Finite clauses

Somewhat unsurprisingly, a negation in an embedded finite clause cannot license NPIs in the matrix clause. It also cannot license auxiliary deletion in the matrix clause:

- (29) *ek=bhii laṛke=ne kah-aa [ki Ram nahĩ: aa-yaa]
one=even boy=ERG say-PFV that Ram NEG came-PFV.MSG
Intended: ‘*Not even a single boy said that Ram came.*’
- (30) Ram kah rahaa *(hai) [ki Ravi seb nahĩ: khaa rahaa]
Ram say PROG.MSG be.PRS.3SG that Ravi apple NEG eat PROG.MSG
(hai)]
be.PRS.3SG

‘Ram is saying that Ravi is not eating apples/the apples.’

The behavior in the other direction is a bit more surprising. A matrix negation can license an NPI in an embedded clause but it cannot license auxiliary deletion in the embedded clause.

- (31) Ram=ko nahī: lag-taa (hai) [ki koi=bhii aa-egaa]
 Ram=DAT NEG seem-HAB be.PRS that someone=even come-FUT.3MSG
‘Ram doesn’t think that anyone will come.’
- (32) Ram=ko nahī: lag-taa (hai) [ki Mina aajkal aisii kitaabē parh
 Ram=DAT NEG seem-HAB be.PRS that Mina these.days such.F books.F read
 rahii *(hai)]
 PROG.F be.PRS.3SG
‘Ram doesn’t think that Mina is reading such books these days.’

Auxiliary deletion is thus a test of clausemate negation. NPI licensing is not such a test, but it still requires a negation that is higher than the NPI.

2.2 Infinitival clauses: Restructuring vs. non-restructuring

Some infinitival clauses present a paradox, which we already introduced at the beginning of this article: a negation which seems to be inside an infinitival complement has effects typical of a matrix negation.

2.2.1 The paradox

In (33) the negation that appears to be embedded licenses deletion of the matrix auxiliary, which in view of the foregoing discussion, requires a clausemate licenser:

- (33) (Seemingly) embedded negation licenses matrix auxiliary deletion (Bhatt 2005):
 Ram Mina=kii madad nahī: kar-naa caah-taa (hai)
 Ram Mina=GEN.F help.F NEG do-INF want-HAB.MSG be.PRS.3SG
‘Ram doesn’t want to help Mina.’

In (34), the NPI requires a negation above it (this means, again, a matrix negation):

- (34) (Seemingly) embedded negation licenses matrix NPI (Mahajan 1990b):
 ek=bhii larke=ne Mina=kii madad nahī: kar-nii caah-ii
 one=even boy=ERG Mina=GEN.F help.F NEG do-INF.F want-PFV.F
‘Not even a single boy wanted to help Mina.’

There are thus two hallmarks of the exceptional behavior of negation: (i) licensing of matrix NPIs and (ii) licensing of matrix auxiliary deletion, both by a (seemingly) embedded negation.

Note that it is possible to have the negative marker in a position where it is unambiguously in the matrix clause, i.e. right before the matrix verb (V_1 *nahĩ*: V_2 ’ order). NPI licensing and auxiliary deletion are, unsurprisingly, possible:⁹

- (35) Matrix negation licenses matrix NPIs:
ek=bhii larke=ne Mina=kii madad kar-nii nahĩ: caah-ii
one=even boy=ERG Mina=GEN.F help.F do-INF.F NEG want-PFV.F
‘Not even a single boy wanted to help Mina.’
- (36) Matrix negation licenses matrix auxiliary deletion:
Ram Mina=kii madad kar-naa nahĩ: caah-taa (hai)
Ram Mina=GEN.F help.F do-INF NEG want-HAB.MSG be.PRS.3SG
‘Ram doesn’t want to help Mina.’

In addition to the two tests that diagnose the exceptional behavior, we note that it is quite odd to have both negations (the seemingly embedded one and the matrix one) at the same time. The result feels deviant (we will come back to this issue in §3.2):

- (37) Two negations: ???
???Ram=ne Mina=kii madad nahĩ: kar-nii nahĩ: caah-ii
Ram=ERG Mina=GEN.F help.F NEG do-INF.F NEG want-PFV.F
Intended: ‘Ram didn’t want to not help Mina.’

A (non-exhaustive) list of verbs whose infinitival complements allow for the exceptional behavior of negation is shown in Table 1.

Modals	<i>caah-naa</i>	‘want’
	<i>sak-naa</i>	‘can’
	<i>caahiye</i>	‘should’
	Dative+V-Inf+be	‘have to’
	<i>par-naa</i>	‘fall/had to’
Aspectuals	<i>shuruu ho/kar-naa</i>	‘start’
	<i>V-ne vaalaa hai</i>	‘is about to’
Other	Dative+V-Inf+come	‘know how to V’
	<i>V-ne diyaa</i>	‘let V’ (permissive)

Table 1: Verbs that permit the exceptional behavior of negation

These verbs (e.g. *want*, *have to*, *start*, etc.) are restructuring predicates (as are their equivalents in many languages).¹⁰ ‘Restructuring’ is a term used to name a range of processes which, although they are ordinarily clause-bounded, can apply across non-

⁹The resulting structures have the same meaning as the structures with a negation that seems to be inside the infinitival clause: this is an artifact of the neg-raising nature of *caah*; on this, see Section 3.1 and Appendix.

¹⁰The status of *let* varies across languages; Butt (1995) shows that it is restructuring in Hindi-Urdu.

finite clause boundaries. Restructuring is diagnosed by clitic climbing in Romance (Aissen and Perlmutter 1983, Rizzi 1978 a.o.) and by long distance scrambling in Germanic (Wurmbrand 2001 a.o.). In Hindi-Urdu, restructuring complements have the following common characteristics: they typically appear as direct objects or internal arguments of the embedding predicate; they do not bear any overt case marking; Long Distance Agreement (LDA) is only possible out of these infinitives (Bhatt 2005). LDA can be described as the agreement of a verb with an argument that is not its own, provided that this verb has no non-overtly case-marked arguments of its own. We illustrate the phenomenon with (38) (Bhatt 2005, ex. (4)), where *caah* ‘want’ has an ergative subject (no non-overtly case-marked arguments of its own) and agrees with *kitaab* ‘book’, the object of the embedded verb:

- (38) Vivek=ne [kitaab parh-nii] caah-ii
 Vivek-ERG book.F read-INF.F want-PFV.FSG
‘Vivek wanted to read the book.’

The following conjecture emerges from the foregoing discussion (also formulated by Bhatt (2005)):

- (39) **Conjecture:** The exceptional behavior of negation, diagnosed by the licensing of matrix NPIs and the licensing of matrix Aux deletion by a (seemingly) embedded negation, is only possible in restructuring infinitives.

In the next subsection, we verify the conjecture by showing that non-restructuring infinitives are incompatible with the exceptional behavior of negation.

2.2.2 ‘Opaque’ (non-restructuring) infinitives

Infinitival subjects do not permit the exceptional behavior of negation:

- (40) Embedded negation does not license auxiliary deletion:
 [mehnat nahī: kar-naa] buraa ho-taa *(hai)
 hard.work.F NEG do-INF bad be-HAB be.PRS.SG
‘To not work hard is a bad thing.’
- (41) Embedded negation does not license matrix NPIs:
 *[mehnat nahī: kar-naa] katai acchaa ho-taa hai
 hard.work.F NEG do-INF a.bit good be-HAB be.PRS.SG
 Intended: *‘To not work hard is a tiniest bit good thing.’*

Notice also that ‘double negation’, which is impossible with *want* (37), is possible here:

- (42) ‘Double negation’ is ok:
 [mehnat nahī: kar-naa] katai acchaa nahī: ho-taa hai
 hard.work.F NEG do-INF a.bit good NEG be-HAB be.PRS.SG
‘To not work hard is not good in the least.’

Second, case-marked infinitival clauses are also incompatible with the exceptional behavior of negation:

- (43) Embedded negation does not license auxiliary deletion:
 Ram Mona=se [Dilli nahī: jaa-ne]=ko kah-taa *(hai)
 Ram Mona=with Delhi NEG go-INF.OBL say-HAB be.PRS.SG
'Ram tells Mona to not go to Delhi.'
- (44) Embedded negation does not license matrix NPIs:
 *kisi=ne=bhii Mona-se [Dilli nahī: jaa-ne]=ko kah-aa
 someone=ERG=even Mona-with Delhi NEG go-INF.OBL say-PFV
*'*Anyone told Mona to not go to Delhi.'*
- (45) 'Double negation' is ok:
 Ram Mona=se [Dilli nahī: jaa-ne]=ko nahī: kah-taa (hai)
 Ram Mona=with Delhi NEG go-INF.OBL NEG say-HAB be.PRS.SG
'Ram doesn't tell Mona to not go to Delhi.'

Certain non case-marked infinitives also do not allow for the exceptional behavior, for example the complement of *bhuulaa* 'forget':

- (46) *ek=bhii larḱaa [khiṛkii nahī: band karnaa] bhuulaa
 one=even boy window.F NEG close do.INF forget.PFV
 Intended: *'Not even one boy forgot to close the window.'*
- (47) ek=bhii larḱaa [khiṛkii band karnaa] nahī: bhuulaa
 one=even boy window.F close do.INF NEG forget.PFV
'Not even one boy forgot to close the window.'
- (48) 'Double negation' is ok:
 ek=bhii larḱaa [khiṛkii nahī: band karnaa] nahī: bhuulaa
 one=even boy window.F NEG close do.INF NEG forget.PFV
'Not even one boy forgot to not close the window.'

The verbs whose complements are incompatible with the exceptional behavior of negation (see Table 2) are all non-restructuring verbs. Non-restructuring complements have a common characteristic, namely, they do not permit LDA.¹¹

V-Inf <i>bhuul-naa</i>	'forget'
V-Inf-Gen <i>koshish kar-naa</i>	'try'
V-Inf-Gen <i>vaadaa kar-naa</i>	'promise'
V-Inf-Dat <i>kah-naa</i>	'say'
V-Inf-for <i>mazbuur kar-naa</i>	'force'
V-naa <i>band ho/kar-naa</i>	'stop'
V-Inf-Gen <i>faislaa kar-naa</i>	'decide'
V-Inf-Gen <i>dhamkii/anumati/aagyaa de-naa/gave</i>	'threaten/permit/order'

Table 2: Verbs that don't permit the exceptional behavior of negation

¹¹*Try* is restructuring in German (Wurmbrand 2001); it is not in Hindi-Urdu if we trust that unavailability of LDA diagnoses non-restructuring; note that it is literally 'do an attempt of', with a genitive mark. *Forget* is restructuring in German and Japanese, but not in Hindi-Urdu, by the same criterion.

- (49) With LDA:
 *mehnat kar-nii acchii ho-tii hai
 hard.work.F do-INF.F good.F be-HAB.F is
 Intended: ‘*To work hard is good.*’
- (50) Without LDA:
 mehnat kar-naa acchaa ho-taa hai
 hard.work.F do-INF.M good.M be-HAB.M is
 ‘*To work hard is good.*’

The same pattern obtains in case-marked infinitives:

- (51) Ram=ne Mina=se [kitaab parhne=ko] kahaa/ *kahii
 Ram=ERG Mina=INST book.F read.INF.OBL=DAT say.PFV.M/ say.PFV.F
 ‘*Ram told Mina to read a/the book.*’

We have now uncovered a second criterion of restructuring in Hindi-Urdu, namely the exceptional behavior of negation (only restructuring predicates permit it). The generalization that the exceptional scope of negation is only possible out of restructuring infinitives (and that LDA is also only possible out of such infinitives) was already formulated by Bhatt (2005). The fact that restructuring is a necessary condition (as stated by (39)) suggests an explanation, developed in the next section, for the exceptional behavior of negation: the embedded verb moves into the matrix to form a cluster with the main verb, and the cluster subsequently head-moves to *nahĩ*., resulting in the ‘*nahĩ*: V₁ V₂’ order (i.e. a matrix negation that looks like an embedded one); this head movement out of the infinitive complement (which creates the ‘V₁ V₂’ cluster) is only possible in restructuring environments.

3 Analysis

In this section, we argue that infinitival complements in Hindi-Urdu provide a new example of verb clustering. We claim that an infinitival verb in this language can form a complex head with an adjacent embedding verb: this process is only possible out of a restructuring complement; a subsequent movement brings the complex head to the matrix ‘*nahĩ*.’. The ‘*nahĩ*: V₁ V₂’ order coupled with matrix licensing effects (what we call ‘exceptional behavior of negation’) *requires* cluster formation: what we see in our example (1) is an infinitival verb forming a cluster with a matrix verb, and tagging along with the latter (see Haider (1993, 2010, 2003) on the role of verb clusters in restructuring in German). Negation thus allows us to detect verb cluster formation.

- (52) Seemingly embedded negation licenses a matrix NPI: [= (1)]
 ek=bhii larke=ne Mina=kii madad nahĩ: kar-nii caah-ii
 one=even boy=ERG Mina=GEN.F help.F NEG do-INF.F want-PFV.F
 ‘*Not even a single boy wanted to help Mina.*’
- (53) [_{Main} Subject ... [_{Embedded} ... V₁] V₂ nahĩ: [V₁-V₂] Aux]]

Note that the rightward verb movement process that creates the complex head is string vacuous — the underlying order of the embedded verb and the matrix verb ($V_{embed} > V_{matrix}$) is preserved by verb movement ($V_{embed} + V_{matrix}$). This is in contrast to the process that moves the verb to *nahĩ:* where the underlying order ($V > nahĩ:$) is reversed yielding *nahĩ: > V*.

In the following, we verify the claim that the exceptional behavior requires matrix negation and hence cluster formation, as in (53). And then we justify the link we made between exceptional behavior and restructuring (Conjecture (39)) and discuss the implications this has for the theory of restructuring.

3.1 The exceptional behavior requires cluster formation

To show that when negation behaves exceptionally, it is in the matrix and consequently, cluster formation is needed, the predicate *shuruu kar* ‘start do’ (‘start’) will be our test case, because it is a restructuring verb but unlike *caah*, it is not a neg-raising predicate, and thus allows us to use the scope of negation as an indicator of its position (with *caah*, neg-raising creates a confound because, whether negation is the embedded or in the matrix, it ends up being interpreted with narrow scope w.r.t. the embedding attitude; on neg-raising, see Fillmore 1963, Bartsch 1973, Horn 1989, Gajewski 2005, Collins and Postal 2017 a.o. and the Appendix to this article).

- (54) *nahĩ:* adjacent to the matrix verb:
 printer=ne abhi:=tak [ka:m kar-na:] shuru: nahĩ: kiya: hai
 printer=ERG now=till work do-INF start NEG do.PFV be.PRS.3SG
 ‘The printer has not started working (yet).’ only: NEG≫START

The above example, where *nahĩ:* appears adjacent to the matrix verb (that is, where matrix negation is expected to be realized) can only be interpreted with the scope NEG≫START, showing that the predicate is not a neg-raiser.¹²

With *start* the ‘*nahĩ:* V₁ V₂’ order permits two construals (START≫NEG and NEG≫START), which can clearly be distinguished by the scope of negation: this verb thus offers useful controls. In the following example, we force the START≫NEG interpretation by putting a compound verb in the matrix clause which is independently incompatible with a clausemate negation (on compound verbs being Positive Polarity Items, see Hook 1974 and Bhatt and Homer 2018):

- (55) *nahĩ:* adjacent to the embedded verb, with a matrix compound verb:
 printer=ne [ka:m nahĩ: kar-na:] shuru: kar diya: hai
 printer=ERG work NEG do-INF start do give.PFV be.PRS.3SG
 ‘The printer has started not working (again).’ only: START≫NEG

¹² (ia) doesn’t share a reading with (ib), therefore *start* is not a neg-raiser in English either:

- (i) a. The printer has not started working (yet).
 b. The printer has started not working (again).

In the absence of such a compound verb, a *nahĩ:* that appears adjacent to the embedded verb can still yield the NEG»START interpretation; this scopal relation requires a matrix negation:

- (56) *nahĩ:* adjacent to the embedded verb, without a matrix compound verb:
 is mue printer=ne abhi=tak ka:m nahĩ: kar-na: shuru: kiyaa!
 this damn printer=ERG now=till work NEG do-INF start do.PRS.3SG
 ‘This damn printer has still not started working!’ ✓NEG»START

Now, we can proceed to the second step: it is possible to show that the exceptional behavior only occurs with the NEG»START reading of the ‘*nahĩ:* V₁ V₂’ order, that is, with a matrix negation. In (57), a subject NPI is licensed, and the only scopal relation between negation and the main verb is NEG»START:

- (57) koi=bhii sarkaar apne aap apne adhikaarõ=ko vikendrikrit nahĩ:
 some=even government itself self’s rights=DAT decentralize NEG
 kar-naa shuruu kar-tii
 do-INF start do-HAB.F
 ‘No government starts decentralizing its powers on its own.’
 only: NEG»START

When we force the negation to take scope under *start* using a compound verb in the matrix, the negation is unable to license matrix NPIs (58a) or auxiliary deletion (58b):

- (58) With obligatory START»NEG construal:
 a. *ek=bhii printer [ka:m nahĩ: kar-na:] shuru: kar deta: hai
 one=even printer work NEG do-INF start do give.HAB be.PRS.3SG
 Intended: ‘Some printer has started not working (again).’
 b. printer [ka:m nahĩ: kar-na:] shuru: kar deta: *(hai)
 printer work NEG do-INF start do give.HAB be.PRS.3SG
 ‘The printer has started not working (again).’

We have thus established that with the word order ‘*nahĩ:* V₁ V₂’, the exceptional licensing effects require the presence of negation in the matrix, despite appearances. It follows from our assumption that *nahĩ:* is sentential negation (14) that moving the embedded verb is required to derive the ‘*nahĩ:* V₁ V₂’ order: the embedded verb piggy-backs on the matrix verb, which rightward-moves to *nahĩ:*, as usual:

- (59) O V_i] V_j] *nahĩ:*
 O t_i] [V_i + V_j] *nahĩ:*
 O t_i] t_j] *nahĩ:* [V_i + V_j]

- (60) **Implication:** If matrix licensing effects occur with the ‘*nahĩ:* V₁ V₂’ order, then (i) *nahĩ:* is in the matrix and (ii) there is verb cluster formation.

As a control, observe that when verb cluster formation is unequivocally absent (and negation is unequivocally embedded), then the matrix licensing effects become impossible. Even though the infinitival verb is typically adjacent to the matrix verb, this adjacency can be disrupted, precluding verb cluster formation:

- (61) [ka:m kar-na:] printer=ne shuru: kar diya: hai
 work do-INF printer=ERG start do give.PFV be.PRS.3SG
'The printer has started working.'

We see that a *nahĩ*: adjacent to the infinitival verb is unable to license matrix NPIs or matrix auxiliary deletion if we disrupt adjacency:

- (62) Adjacency between V-Inf and V is disrupted, *nahĩ*: cannot have licensing effects in the matrix:
- a. *[ka:m nahĩ: kar-na:] ek=bhii printer=ne shuru: kiya
 work NEG do-INF one=even printer=ERG start do.PFV
 Intended: *'No printer has started working.'*
- b. [ka:m nahĩ: kar-na:] printer do baje shuru: kartaa *(hai)
 work NEG do-INF printer two o'clock start do.IMPFV be.PRS.SG
'The printer starts not working at 2 o'clock.'

Because the exceptional behavior of negation requires restructuring (§2.2), we can conclude that verb clustering, as *diagnosed* by the placement of the marker *nahĩ*: (i.e. the '*nahĩ*: V₁ V₂' order) under a wide scope construal of negation, only happens if the embedded clause is a restructuring infinitive.

- (63) **Implication:** If $V_{embed} + V_{matrix}$ clustering obtains, then the complement is restructuring.

We don't observe verb clustering with non-restructuring predicates, as shown by (43)-(44). We showed lack of licensing effects in the matrix under the order '*nahĩ*: V₁ V₂'; we can now add to this the obligatory narrow scope of negation under the same order:

- (64) ... *nahĩ*: V_{read} V_{say} Aux: only embedded negation
 Mina=ne Ravi=se [yah kitaab nahĩ: parh-ne]=ko kah-aa thaa
 Mina=ERG Ravi=INST this book.F NEG read-INF-KO say-PFV be.PST
'Mina had told Ravi to not read this book.'
 Unavailable: *'Mina hadn't told Ravi to read this book.'*

In the next subsection, we show that *shuruu kar* 'start' differs from other restructuring embedding verbs, e.g. *sak* 'can', with which the '*nahĩ*: V₁ V₂' order is not scopally ambiguous, i.e. is only compatible with a high negation interpretation. We argue that under the low negation construal of the '*nahĩ*: V₁ start' order, *shuruu kar* 'start' is not restructuring. Therefore some verbs are part-time restructuring verbs.

3.2 Differences among restructuring complements

With the verb *sak* 'can', another restructuring verb, the order '*nahĩ*: V₁ can' only delivers one reading, NEG>>CAN:

- (65) Ram tiis second=tak saans nahĩ: le saktaa hai
 Ram thirty seconds=till breath NEG take can.HAB.MSG be.PRS.SG

'Ram can't breathe for 30 seconds.' ✓NEG>>CAN
 Unavailable: *'Ram has the ability to not breathe for 30 seconds.'**CAN>>NEG

This suggests that the complement of *sak* cannot host a negation, because it is too small for that: for *nahĩ*: to precede V_1 , V_1 has to form a cluster with *can*, which moves further along (the '*nahĩ*: V_1 *can*' order cannot result from movement of V_1 to an embedded *nahĩ*:). Furthermore, the order ' V_1 *nahĩ*: *can*' is also possible, and it again only has the NEG>>CAN reading:

- (66) Ram tiis second=tak saans le nahĩ: saktaa hai
 Ram thirty seconds=till breath take NEG can.HAB.MSG be.PRS.SG
'Ram can't breathe for 30 seconds.' ✓NEG>>CAN
 Unavailable: *'Ram has the ability to not breathe for 30 seconds.'**CAN>>NEG

From this we infer that cluster formation is not a process that obligatorily occurs whenever possible (i.e. whenever two V heads are adjacent at deep-structure). If cluster formation was obligatory, an underlying ' V_1 *can* *nahĩ*:' structure would only yield the '*nahĩ*: V_1 *can*' order subsequent to cluster formation and inversion with matrix negation.

The complement of *want* also seems to be too small to host a negation. This is shown by the degradation of sentences like (37): the second negation is unequivocally in the matrix and the first one, by virtue of the ban on multiple clausemate negations (5), must be in the embedded clause:¹³

- (67)???Ram=ne Mina=kii madad nahĩ: kar-nii nahĩ: caah-ii
 Ram=ERG Mina=GEN.F help.F NEG do-INF.F NEG want-PFV.F
 Intended: *'Ram didn't want to not help Mina.'* [(37)]

We can rule out the possibility that (67) is odd because *caah* 'want' is a neg-raising predicate. This is because double negation is acceptable when *caah* takes a finite clause complement, as in (68), which allows for a neg-raised interpretation where Ram is against Mina's not going to Delhi, as opposed to just being indifferent.

- (68) Ram nahĩ: caah-taa [ki Mina Dilli nahĩ: jaa-e]
 Ram NEG want-HAB that Mina.F Delhi NEG go-SBJV.3.SG
'Ram doesn't want that Mina not go to Delhi.' ✓WANT>>NEG>>NEG

Turning to *start*, its complement can obviously contain a negation (55). And double negation is possible:

- (69) printer-ne abhi:=tak ka:m nahĩ: kar-na: shuru: nahĩ: kiya: hai
 printer-ERG now=till work NEG do-INF start NEG do.PFV be.PRS.SG
'The printer hasn't started not working up until now.' NEG>>START>>NEG

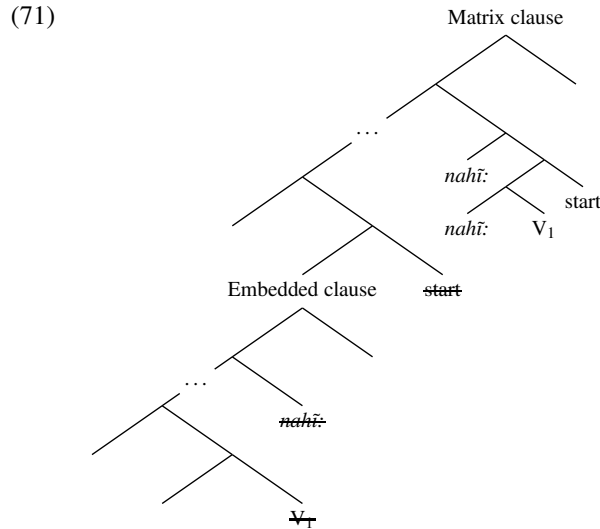
We propose that its infinitival complement can be larger than the infinitival complement of *can*. We distinguish two main analytical options. (i) Each restructuring verb has an infinitival complement with a fixed size, but restructuring verb complements are

¹³Remember that with *want*, we can't use scope to determine the position of negation, because *want* is a neg-raiser.

not equal among themselves; not all restructuring complements are large enough to encompass the position of negation (in Hindi-Urdu, the complement of *start*, unlike that of *can* or *want*, is large enough to contain negation). Or (ii) whether they vary in size or not, restructuring complements are all too small to host negation; and *start* in Hindi-Urdu is only optionally restructuring (*qua* restructuring verb, its complement is small; it is not restructuring when its complement contains a negation¹⁴).

It seems more economical to state, in agreement with the second horn of the alternative, that all restructuring complements are too small to host negation; and that the cases where the order ‘*nahĩ: V₁ start*’ has a narrow scope reading of negation are cases where the complement is not restructuring. If we are right about the unavailability of negation in restructuring complements (option (ii)), then *start* is not restructuring when its complement contains a negation. We make a prediction: in the presence of an embedded negation, verb cluster formation is impossible (and the subsequent movement of the complex head to matrix *nahĩ:* is too). For concreteness’ sake, the order ‘*nahĩ: nahĩ: V₁ start*’ (derived as in (71)) is predicted to be impossible. This is indeed what we find (compare with (69)):

- (70) *printer-ne abhi:=tak ka:m nahĩ: nahĩ: kar-na: shuru: kiya: hai
 printer-ERG now=till work NEG NEG do-INF start do.PFV be.PRS.SG
 Intended: ‘The printer hasn’t started not working up until now.’



In the next subsection, we add evidence in favor of the claim that *start* in Hindi-Urdu is not restructuring when its complement contains a negation. The overarching idea is that

¹⁴Double negation is possible under the order ‘*nahĩ: V₁ V₂*’ with *kah* ‘say’, which is never restructuring:

- (i) ... *nahĩ: V_{read} nahĩ: V_{say} Aux: ok*
 Mina=ne Ravi=se [yah kitaab nahĩ: parh-ne]=ko nahĩ: kah-aa thaa
 Mina=ERG Ravi=INST this book.F NEG read-INF-KO NEG say-PFV be.PST
 ‘Mina hadn’t told Ravi to not read this book.’

Each of the two negations has its own clause to negate.

restructuring infinitives are too small to contain negation. Another diagnostic that has been argued to be associated with restructuring in Hindi-Urdu, namely Long Distance Agreement (LDA), helps us substantiate this claim.

3.3 LDA, negation and restructuring

There is one environment where we find an interaction between Long Distance Agreement and the size of the infinitival complement. Recall that we have argued that restructuring infinitives cannot host negation, i.e. negation cannot take scope inside them. So if we have an infinitival clause that includes negation which takes scope inside it, then we can be sure that we do not have a restructuring infinitive. And in this case, Long Distance Agreement should be blocked, since LDA requires restructuring. This is indeed a correct prediction. In environments where negation stays downstairs, we don't get Long Distance Agreement; or at least it's degraded:

- (72) Negation takes scope inside infinitival, No LDA:
 Ram=ne [phir=se mehnat nahī: karnaa] shuruu kar diyaa
 Ram=ERG again hard.work.F NEG do.INF.DEF start do give.PFV.DEF
 thaa
 be.PST.DEF
'Ram has again started to not work hard.'
- (73) Negation takes scope inside infinitival, LDA: */degraded
 ???Ram=ne [phir=se mehnat nahī: karnii] shuruu kar dii thii
 Ram=ERG again hard.work.F NEG do.INF.F start do give.PFV.F be.PST.F
 Intended: *'Ram has again started to not work hard.'*

When negation displays the exceptional behavior, both Long Distance Agreement and Default agreement are possible:

- (74) Negation takes scope outside infinitival: Long Distance Agreement possible
 ek=bhii laṛke=ne abhi=tak mehnat nahī: karnii shuruu kii
 one=even boy=ERG now=till hard.work.F NEG do.INF.F start do.PFV.F
 hai
 be.PST.DEF.F
'Not even one boy has started working hard yet.'
- (75) Negation takes scope outside infinitival: default agreement possible
 ek=bhii laṛke=ne abhi=tak mehnat nahī: karnaa shuruu
 one=even boy=ERG now=till hard.work.F NEG do.INF.DEF start
 kiyaa hai
 do.PFV.DEF be.PST.DEF

We conclude this section with a mystery. We had noted that *caah* 'want' did not felicitously allow for *nahī:* to simultaneously appear in the main clause and (superficially) in the infinitival clause (67); and we concluded from this that the complement of *caah* is too small to host negation. But precisely this configuration becomes available if the infinitival complement of *caah* is scrambled:

- (76) Scrambled infinitive, low negation, default agreement:
 ?[yeh kitaab nahī: paṛhnaa] Ram=ne (nahī:) caahaa thaa
 this book.F NEG read.INF.DEF Ram=ERG NEG want.PFV.DEF be.PST.DEF
'It was Ram who (didn't) want(ed) to not read this book.'

In this configuration, we can demonstrate that negation has to be embedded, using the diagnostics of auxiliary deletion and matrix NPI licensing.

- (77) a. *[yeh kitaab nahī: paṛhnaa] ek=bhii laṛka: caahtaa
 this book.F NEG read.INF.DEF one=even boy want.HAB.M.SG
 hai
 be.PRS.M.SG
 b. [yeh kitaab nahī: paṛhnaa] Ram caahtaa *(hai)
 this book.F NEG read.INF.DEF Ram.M want.HAB.M.SG be.PRS.M.SG
'It's Ram who doesn't want to read this book.'

All else being the same, this is unexpected for our analysis. One could handle this case though by appealing to the idea that a moved structure can be bigger than its unmoved variant (perhaps because some complements need to be small when they are *in situ*). Be that as it may, the acceptability of (76) makes a prediction: by our proposal, the infinitive in (76) has to be a non-restructuring infinitive in order to host negation. Consequently it should block Long Distance Agreement. Though the judgement is subtle, the prediction is borne out. Long Distance Agreement is bad or at least very degraded.

- (78) Scrambled infinitive, low negation, LDA: ungrammatical/degraded
 ???/*[yeh kitaab nahī: paṛhnii] Ram=ne (nahī:) caahii thii
 this book.F NEG read.INF.F Ram=ERG NEG want.PFV.F be.PST.F
'It was Ram who (didn't) want(ed) to not read this book.'

It is worth noting that the unacceptability of Long Distance Agreement in (78) does not follow from the scrambling of the infinitive. Scrambled infinitives by themselves do not block Long Distance Agreement as can be seen in (79):

- (79) Scrambled infinitive, LDA:
 [yeh kitaab paṛhnii] Ram=ne caahii thii
 this book.F read.INF.F Ram=ERG want.PFV.F be.PST.F
'It was Ram who wanted to read this book.'

The acceptability of Long Distance Agreement with scrambling also tells us that while scrambling permits *caah* 'want' to combine with a 'big' (i.e. non-restructuring) infinitival complement, it does not force the complement to be 'big'; a 'small' (i.e. restructuring) complement is also an option allowing for Long Distance Agreement.

3.4 The independence of verb clustering and Long Distance Agreement

In this article, we have considered two restructuring diagnostics for Hindi-Urdu: verb clustering and Long Distance Agreement. We want to highlight here that these two diagnostics are independent. You can have one without the other.

First we have cases where the exceptional behavior of negation tells us that verb movement has taken place, and both Long Distance Agreement and default agreement are possible:

- (80) Verb clustering and LDA: [cf. (74)]
ek=bhii laṛke=ne roṭii nahī: khaanii caahii
one=even boy=ERG bread.F NEG eat.INF.F want.PFV.F
‘Not even a single boy wanted to eat bread.’
- (81) Verb clustering and default agreement (no LDA): [cf. (75)]
ek=bhii laṛke=ne roṭii nahī: khaanaa caahaa
one=even boy=ERG bread.F NEG eat.INF.DEF want.PFV.DEF
‘Not even a single boy wanted to eat bread.’

Verb clustering is possible, even when LDA doesn’t take place (81).

On the other hand, we can consider environments where the non-adjacency of the embedded verb and the matrix verb tells us that verb movement has not taken place. In these environments too, we find that both Long Distance Agreement and default agreement are possible:

- (82) Scrambled infinitive, LDA: [= (79)]
[yeh kitaab paṛhnii] Ram=ne caahii thii
this book.F read.INF.F Ram=ERG want.PFV.F be.PST.F
‘It was Ram who wanted to read this book.’
- (83) Scrambled infinitive, default agreement:
[yeh kitaab paṛhnaa] Ram=ne caahaa thaa
this book.F read.INF.DEF Ram=ERG want.PFV.DEF be.PST.DEF
‘It was Ram who wanted to read this book.’

If the embedded infinitive has been scrambled, it is not surprising that the configuration for verb clustering is no longer available. The next case is more surprising as it shows us that even in an underlying configuration ‘ V_1 V_2] nahī:’, without scrambling, where the embedded verb could have moved to the matrix verb, it does not have to do so. We know that this is the case because if verb movement in the ‘ V_1 V_2] nahī:’ configuration was obligatory, only the ‘nahī: V_1 V_2 ’ order would surface.

- (84) V_1 nahī: V_2 , LDA:
Ram=ne [yeh kitaab paṛhnii] nahī: caahii thii
Ram=ERG this book.F read.INF.F NEG want.PFV.F be.PST.F
‘Ram didn’t want to read this book.’
- (85) V_1 nahī: V_2 , default agreement:

Ram=ne [yeh kitaab parhnaa] nahĩ: caahaa thaa
 Ram=ERG this book.F read.INF.DEF NEG want.PFV.DEF be.PST.DEF
 ‘Ram didn’t want to read this book.’

LDA is possible, even when clustering doesn’t take place (84).

Therefore Long Distance Agreement and verb clustering are independent of each other. This independence raises an analytical challenge for approaches to Long Distance Agreement such as Bhatt (2005), which relate the optionality of Long Distance Agreement (see also Mahajan 1989 and Butt 1995) with *caah* ‘want’ to the idea that *caah* is optionally restructuring: it embeds a small structure (a restructuring complement), where LDA is obligatory (86), or a larger structure (a non-restructuring complement), where LDA is impossible (87) (examples from Mahajan 1989):

- (86) LDA:
 Ram-ne [roṭii khaa-nii] chaah-ii
 Ram-ERG bread.F eat-INF.F want-PFV.FSG
 ‘Ram wanted to eat bread.’

- (87) No LDA:
 Ram-ne [roṭii khaa-naa] chaah-aa
 Ram-ERG bread.F eat-INF.M want-PFV.MSG
 ‘Ram wanted to eat bread.’

This line of reasoning leads one to expect that when verb clustering, which requires restructuring as shown in this article, happens, LDA should obligatorily obtain. But as we have seen, this prediction is not borne out. While Long Distance Agreement is indeed possible when the placement of negation (together with matrix licensing) signals verb movement, default agreement is also possible (see (81)).

What this tells us is that contra Bhatt (2005), the presence of a restructuring infinitival complement is not enough on its own to force Long Distance Agreement. The presence of such a complement is necessary but not sufficient. It is possible that the notion of restructuring needed for verb clustering is distinct from the one needed for (obligatory) Long Distance Agreement; the former would allow for larger structures than the latter. We offer this merely as a suggestion here; the details of such a proposal remain to be worked out.¹⁵

4 What if *nahĩ:* is not negative?

Our argumentation so far rests on the assumption that *nahĩ:* is intrinsically negative (14). We should now explore the implications of the opposite assumption, that *nahĩ:* is not negative. A number of researchers claim that, in some languages, sentential negation is or can be a silent morpheme (Laka 1990, Ladusaw 1992, Rowlett 1998, Alonso-Ovalle and Guerzoni 2004, Penka 2007, Zeijlstra 2008, Homer and Thommen 2013, a.o.). Abstract negation is postulated, for example, to account for the apparent negative strength of preverbal neg-words in non strict negative concord languages, e.g. Span-

¹⁵See Keine 2016 for another proposal that attempts to derive the optionality of LDA.

ish and Italian (e.g. *nessuno è venuto* ‘no one came’ in Italian, where *nessuno* is a neg-word). The presence of the abstract negation is signaled by dedicated overt morphemes, specifically neg-words (or one could say, along the lines of Ladusaw 1992, that abstract negation needs to be *licensed* by neg-words). We could hypothesize that negation in Hindi-Urdu is covert and that *nahĩ*: is either a minimizer, whose meaning is akin to *at all*, or some more neutral element akin to *in any way*. Historically, *pas* in French (which Homer and Thommen 2013 show to be a neg-word, and not carry negative semantic content) started out as a minimizer (‘not even one step’), but didn’t retain its minimizer meaning; like other neg-words, it is a licenser of negation (as first claimed by Milner 1979) and an NPI; its meaning could plausibly be that of an indefinite, i.e. *in any way*.

- (88) Jean ne boit pas.
 Jean NE drink PAS
 ‘Jean doesn’t drink.’

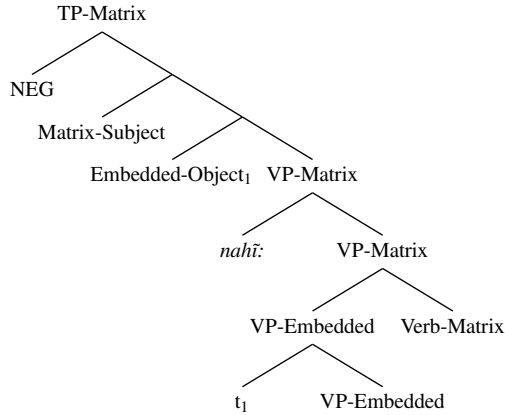
If *nahĩ*: is not negative, it is an associate of some higher, covert, morpheme, which is intrinsically negative (this morpheme is higher than the canonical position of subjects, Section 1.3). And it can be left-attached (left-attachment entails that *nahĩ*: is not negative (16), because of scope relations), or right-attached. If correct, the former version of this hypothesis, the one that holds that *nahĩ*: is left-attached (as in (12) on p. 5), removes the evidence for verb clustering. In subsections §4.1-§4.3, we discuss and eventually rule out this version.¹⁶

4.1 Left-attachment in the matrix clause

Suppose first that in complex sentences, under this version, we attach *nahĩ*: to the *matrix* VP; we would have to scramble material from the infinitival clause to *nahĩ*: in order to achieve the ‘*nahĩ*: V1 V2’ order under the exceptional behavior of negation:

- (89) *Left-attachment of nahĩ: in the matrix clause:*

¹⁶In Section 1.3.2, we derived an intervention effect of a postverbal XP using the right-attachment of *nahĩ*: and an ancillary assumption about leftward VP remnant movement. Here we will, using complex sentences, provide more direct evidence against left-attachment.



Left-adjoining *nahĩ:* is potentially problematic as *nahĩ:* is in general not discontinuous from the verbal complex. The following is an additional argument against this possibility.

We know that when *nahĩ:* is inside a non-restructuring infinitive matrix NPIs and matrix auxiliary deletion are not licensed. And yet scrambling out of non-restructuring infinitives is possible in Hindi-Urdu:

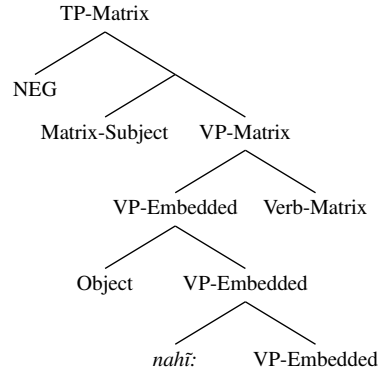
- (90) Ram=ne [merii kitaab]_i Sita=se aaj subah [t_i kal
 Ram=ERG my.F book.F Sita=INSTR today morning tomorrow
 paṛh-ne]=ko kah-aa
 read-INF=DAT say-PFV
 ‘This morning Ram told Sita to read my book tomorrow.’

Since scrambling is in fact possible quite generally, we presume that it could, in concert with the silent negation hypothesis (as in (89)), derive exceptional behavior of negation out of non-restructuring complements, contrary to fact. It must then be that left-adjunction to matrix VP is unavailable, as it would overgenerate.

4.2 Left-attachment in the embedded clause

We could also entertain the idea that, when NEG is in the matrix, the *nahĩ:* that signals its presence need not be in the same clause, but can be in an embedded clause, provided that certain locality conditions, i.e. presumably, restructuring, are met. The idea here would be: NEG requires *nahĩ:* in its scope, and *nahĩ:* has to be predicate adjacent; but it need not be adjacent to the closest predicate.

- (91) *Left-attachment of nahĩ: in the embedded clause:*



The placement of *kyaa* ‘what’ w.r.t. *nahī:* lends some plausibility to this idea. *Wh*-words in Hindi-Urdu have a strong tendency to be immediately pre-verbal. This is also the case with *kyaa* ‘what’ but to a much greater extent:

- (92) a. Ram=ne Sita=ko *kyaa* diyaa
 Ram=ERG Sita=DAT what give.PFV
 ‘What did Ram give to Sita?’
 b. ??Ram=ne *kyaa* Sita=ko diyaa
 Ram=ERG what Sita=DAT give.PFV
 Intended: ‘What did Ram give to Sita?’

Let us assume that this is because *kyaa* ‘what’ cannot be scrambled. If so, then the following example, where the matrix Aux can be deleted, shows a case where scrambling cannot be used to achieve the exceptional behavior of negation and *nahī:* (if non-negative) must thus be in the embedded:

- (93) Ram *kyaa nahī:* khaa-naa caah-taa (hai)?
 Ram what NEG eat-INF want-HAB be.PRS.3SG
 ‘What does Ram not want to eat?’

If *nahī:* was attached to the matrix clause, then *kyaa* would have to scramble over it. Given that scrambling of *kyaa* leads to deviance, the non-deviance of (93) tells us that there is no scrambling involved: therefore *nahī:* (if non-negative) is not left-attached in the matrix but in the embedded.

4.3 Ruling out left-attachment

Left-attachment in the embedded might seem to be a viable option, but the general left-attachment hypothesis is not in fact tenable. The hypothesis that *nahī:* is non-negative and left-attached predicts that two options are possible: left-attachment in the embedded *and* left-attachment in the matrix:

- (94) *nahī:* is left-attached \Rightarrow *nahī:* can be attached in the matrix & *nahī:* can be attached in the embedded clause

But we have shown that left-attachment in the matrix is not an option (Section 4.1). Therefore one of the conjuncts in (94) is false; and the antecedent of the conditional is thus false too. The hypothesis examined here is falsified.

4.4 Right-attachment of *nahĩ*?

Under the non-negative *nahĩ*: hypothesis, the remaining options are: attachment of *nahĩ*: to the right of the embedded VP or to the right of the matrix VP. In the former case, no verb clustering is needed, the ‘*nahĩ*: V₁ V₂’ word order can be derived simply by moving the embedded V to *nahĩ*:. In the latter case, verb clustering is needed. Suppose that the two options are indeed available: then we can still be sure that verb clustering can happen (it does when *nahĩ*: is merged in the matrix), but we can no longer use the ‘*nahĩ*: V₁ V₂’ word order, i.e. the ‘exceptional behavior’, as a diagnostic of clustering, as we do under Assumption (14). Verb clustering, though real, is thus unobservable under such assumptions. However an argument against the non-negative *nahĩ*: hypothesis (in both of its versions, i.e. left or right-attachment) can be made by noting that, when *nahĩ*: is inside a scrambled infinitive (which we know can be restructuring, cf. (82)), matrix licensing effects are blocked (77): it is unclear why displacing the associate of the abstract negation, by moving the complement of the verb, should lead to deviance.

5 A comparison with Keine and Bhatt 2016

Keine and Bhatt (2016) present an analysis of the long passive construction in German with which our analysis shares a number of important features. They propose that restructuring infinitival complements undergo obligatory string-vacuous head movement whenever the infinitival verb and the main verb are adjacent. However, this movement is not an essential part of the long passive construction. This movement is blocked if the adjacency between the two verbs is disrupted as happens if the embedded VP is moved but the long passive remains an option. Thus far, the analysis of the German long passive and the treatment of the Hindi-Urdu construction is strikingly similar. Both involve string vacuous head movement and in both cases, non-adjacency between the verbs blocks head movement. One difference is that in German, head movement is obligatory when possible (i.e. when adjacency obtains) while in Hindi-Urdu, it is optional (66).

There is another, possibly more significant, difference between the two languages. In Keine and Bhatt 2016, the head movement operation is semantically contentful. The two verbs combine via function composition and a consequence of this in the system is that all quantificational material inside the infinitival clause has to take scope over the matrix clause, a consequence of which is that only *de re* readings are available for embedded indefinites:¹⁷

¹⁷By ‘*de re* readings’, we mean readings where the quantificational force of the indefinite has wide scope over the intensional verb and the restrictor is transparent, as opposed to *de dicto* readings, characterized by a narrow scope quantification and an opaque restrictor.

- (95) Long passive: *de re*/**de dicto*
 Gestern wurden zwei gute Studenten zu finden versucht.
 yesterday were two good students.NOM to find tried
 Lit.: *'Yesterday it was tried to find two good students.'*
- (96) Local passive: *de re/de dicto*
 Gestern wurde zwei gute Studenten zu finden versucht.
 yesterday was two good students.ACC to find tried
 Lit.: *'Yesterday it was tried to find two good students.'*

Moreover adjuncts inside the infinitival clause are construed with the matrix clause.

- (97) Long passive: only matrix construal of adjunct
 #Erst gestern wieder wurde der Traktor mit einem Spezialwerkzeug zu
 just yesterday again was the tractor.NOM with a special.tool to
 reparieren vergessen.
 repair forgotten
 Lit.: *'Just yesterday it was forgotten with a special tool to repair the tractor.'*
- (98) Local passive: embedded construal of adjunct possible
 Erst gestern wieder wurde den Traktor mit einem Spezialwerkzeug zu
 just yesterday again was the tractor.ACC with a special.tool to
 reparieren vergessen.
 repair forgotten
 Lit.: *'Just yesterday it was forgotten to repair the tractor with a special tool.'*

These semantic effects are not found in their closest Hindi-Urdu counterparts — Hindi-Urdu does not have a long passive but it does have restructuring infinitives which can be diagnosed by Long Distance Agreement and verb clustering. We find that both *de re* and *de dicto* readings are possible but the *de dicto* reading with the (NEG>>ANY_BOY>>WANT>>TWO_BOOKS) scope configuration is preferred. In this configuration, there is no boy with a desire to read two (non-specific) books. If, like in German, *two books* was forced to take scope over *want*, this reading would have been unavailable:

- (99) ek=bhii laṛke=ne do kitaabē nahī paṛhni: caah-ī:
 one=even boy=ERG two books.F NEG read.INF.F want.PFV.F.PL
'Not even a single boy wanted to read two books.'
 Both *de re* and *de dicto* possible, *de dicto* preferred
 ✓NEG>>ANY_BOY>>WANT>>TWO_BOOKS

Likewise, embedded construal of adjuncts is possible with LDA and verb clustering (diagnosed by the exceptional behavior of negation):

- (100) ek=bhii laṛke=ne churi:-kā:ṭe=se roṭii nahī: khaa-nii caah-ii
 one=even boy=ERG knife-fork=INST bread.F NEG eat-INF.F want-PFV.F
'Not even a single boy wanted to eat bread with a knife and fork.'

We do not have a full understanding of why the Hindi-Urdu cases of restructuring and the German cases of long passive differ in the way they do. One possible line of investigation would relate this difference to the fact that even restructuring complements in Hindi-Urdu constitute their own case domain (see Bhatt 2005) as opposed to German where Wurmbrand (2001) has argued based on data from the long passive that the embedded infinitival in restructuring infinitivals is dependent on the matrix predicate for case-licensing.

Conclusion

Verb cluster formation is a test for restructuring in Hindi-Urdu, along with Long Distance Agreement: it can only occur out of restructuring infinitives. This clustering can be diagnosed by the exceptional behavior of negation, whereby negation seems to be embedded in an infinitive, due to the ‘nahī: V1 V2’ order, and yet is interpreted in the matrix, as indicated directly by its scope w.r.t. the embedding verb (for non-neg-raising predicates), or by its licensing effects in the matrix. That verb clustering and LDA are both optional when possible (i.e. in restructuring environments), as we showed using the independence of the two phenomena, indicates that restructuring is non-sufficient, although necessary, for both.

A The exceptional behavior is not due to neg-raising

Many of our examples where negation exhibits an exceptional behavior have the restructuring verb *caah* ‘want’ as their matrix verb. Since it is also a neg-raising predicate, it is tempting to derive the exceptional behavior of negation embedded inside the complement of ‘want’ from this aspect of its semantics. The reading that obtains is one where negation seems to be interpreted in the embedded clause, similarly to what we find in the following English example, with the neg-raising predicate *want*:

(101) Mary doesn’t want to help me. ✓WANT≫NEG

In (101), negation surfaces in the matrix, but the sentence is (preferentially) paraphrasable as: ‘*Mary wants to not help me.*’ Only certain embedding verbs allow for this scope reversal; *want* is one of them. We already know that neg-raising is not necessary for the exceptional behavior of negation, since the latter occurs with non-neg-raisers, e.g. *shuruu kar* ‘start’ (§3); here we show that it is not sufficient either.

Suppose that the syntactic approaches to neg-raising, known as ‘negative transportation’ theories (Fillmore 1963, Lakoff 1969, Ross 1973, Seuren 1974, Prince 1976, Collins and Postal 2014, 2017 a.o.) are correct: then we can imagine that despite being realized in the embedded clause in Hindi-Urdu, negation covertly raises in the matrix, but still gets interpreted in the low position, as in English; in a sense then Hindi-Urdu would show us an example where the tail of the negative chain (the interpreted copy) is realized, while the head of the chain is silent. Although it could perhaps capture auxiliary deletion as an effect of the presence of a silent copy of NEG in the matrix, such an

account faces an immediate challenge: NPIs need to be licensed at LF, therefore a low interpretation of negation is at odds with the licensing of NPIs in the matrix.

We offer an additional argument against this line of reasoning. *Caah* ‘want’ can embed infinitival complements but it can also embed finite subjunctive complements. The choice of complement does not influence the neg-raising property of *caah* ‘want’:

- (102) *nahĩ*: in the matrix:
 Ram (yeh) nahĩ: caah-taa hai [ki Sita Dilli jaa-e]
 Ram this NEG want-HAB be.PRS.SG that Sita Delhi go-SBJV.3
‘Ram doesn’t want that Sita go to Delhi.’ ✓WANT>>NEG
- (103) *nahĩ*: in the subjunctive complement:
 Ram (yeh) caah-taa hai [ki Sita Dilli naa/nahĩ: jaa-e]
 Ram this want-HAB be.PRS.SG that Sita Delhi NEG go-SBJV.3
‘Ram wants that Sita not go to Delhi.’

(102) has a neg-raised reading, under which it is a paraphrase of (103). Now, despite the presence of a neg-raising semantics, embedded negation in subjunctive clauses is not enough to license matrix NPIs or matrix auxiliary deletion:

- (104) No matrix auxiliary deletion:
 *Ram (yeh) caah-taa [ki Sita Dilli naa/nahĩ: jaa-e]
 Ram this want-HAB that Sita Delhi NEG go-SBJV.3
 Intended: *‘Ram wants that Sita not go to Delhi.’*
- (105) No matrix NPI licensing:
 *ek=bhii laṛkaa (yeh) caah-taa hai [ki Sita Dilli naa/nahĩ:
 one=even boy this want-HAB be.PRS.SG that Sita Delhi NEG
 jaa-e]
 go-SBJV.3
 Intended: *‘Not even a single boy wants Sita to go to Delhi.’*

The following example is a control showing that, contrary to embedded *nahĩ*:, matrix *nahĩ*: has the expected effects:

- (106) Matrix negation and auxiliary deletion/NPI licensing:
 ek=bhii laṛka: (yeh) nahĩ: caah-taa (hai) [ki Sita Dilli jaa-e]
 one=even boy this NEG want-HAB be.PRS.SG that Sita Delhi go-SBJV.3
‘Not even one boy wants that Sita go to Delhi.’

Note also that double negation is possible (concomitantly with auxiliary deletion):

- (107) Matrix and embedded negation:
 Ram (yeh) nahĩ: caah-taa (hai) [ki Sita Dilli naa/nahĩ: jaa-e]
 Ram this NEG want-HAB be.PRS.SG that Sita Delhi NEG go-SBJV.3
‘It’s not the case that Ram wants that Sita not go to Delhi.’

As far as the exceptional behavior of negation is concerned, subjunctive complements behave like finite clauses: neg-raising is not sufficient to derive the cluster of properties we are interested in.

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