1 Overview

1.1 Rightward Movement

In addition to permitting scrambling, which is defined as involving reordering of arguments with the verb staying in the final position, the Indo-Aryan languages also permit arguments to appear to the right of the verb. Such cases are lumped together under the rubric of Rightward Movement.

(1) (from Kidwai (2000):3)

a. Basic Word Order: Subj IO DO V
   Nur-ne Anjum-ko kitaab di-i
   Nur-Erg Anjum-Dat book.f give-Pfv.f
b. 5 scrambling orders (Subj DO IO V, IO Subj DO V, DO Subj IO V, IO DO Subj V, DO IO Subj V)
   c. IO DO V Subj
      Anjum-ko kitaab di-i Nur-ne
      Anjum-Dat book.f give-Pfv.f Nur-Erg
d. Subj DO V IO
   Nur-ne kitaab di-i Anjum-ko
   Nur-Erg book.f give-Pfv.f Anjum-Dat
e. Subj IO V DO
   Nur-ne Anjum-ko di-i kitaab
   Nur-Erg Anjum-Dat give-Pfv.f book.f
f. DO IO V Subj
   kitaab Anjum-ko di-i Nur-ne
   book.f Anjum-Dat give-Pfv.f Nur-Erg
g. DO Subj V IO
   kitaab Nur-ne di-i Anjum-ko
   book.f Nur-Erg give-Pfv.f Anjum-Dat

h. IO Subj V DO
   Anjum-ko Nur-ne di-i kitaab
   Anjum-Dat Nur-Erg give-Pfv.f book.f
i. Possible: _ V ... (i.e. Subj V IO DO, Subj V DO IO, IO V Subj DO, IO V DO Subj, DO V Subj IO, DO V IO Subj)
j. Also Possible: V ... _ (i.e. V Subj IO DO, V Subj DO IO, V IO Subj DO, V IO DO Subj, V DO Subj IO, V DO IO Subj)
   (Most marked order, perhaps Verum Focus)
   Nur gave Anjum a book.

1.2 Complementation

Non-finite complements typically precede the verb, but they can also appear in postverbal positions.

(2) a. Preverbal non-finite complement:
   Mona [ghar jaa-naa] chaah-tii hai
   Mona.f home go-Inf want-Hab.f be.Prs.Sg
   ‘Mon wants to go home.’
b. Postverbal non-finite complement:
   Mona chaah-tii hai [ghar jaa-naa]
   Mona.f want-Hab.f be.Prs.Sg home go-inf
   ‘Mon wants to go home.’

In Hindi, finite clause complements can only appear verb finally.

(3) a. Postverbal finite complement:
   Mona jaan-tii hai [?(ki) Rohit chant hai]
   Mona.f know-Hab.f be.Prs.Sg that Rohit.m cunning be.Prs.Sg
   ‘Mona knows that Rohit is cunning.’
b. *Preverbal finite complement:
   *Mona [(ki) Rohit chant hai] jaan-tii hai
   Mona.f that Rohit.m cunning be.Prs.Sg know-Hab.f be.Prs.Sg

→ No finite sentential subjects in Hindi.
Bengali allows for finite clauses to appear both pre- and post-verbally, but with different complementizers.

(4) (Bengali, from Bayer (1995))
   a. Preverbal finite complement, clause-final complementizer
      chele-Ta [(or baba aS-be) bOle] Sune-che
      boy-CL his father come-Fut Comp1 hear-Pst
      ‘The boy has heard that his father will come.’
   b. Postverbal finite complement, clause-initial complementizer
      chele-Ta Sune-che [je [(or baba aS-be)]]
      boy-CL hear-Pst Comp2 his father come-Fut
      ‘The boy has heard that his father will come.’

The reverse options - a preverbal finite complement with a clause-initial complementizer, and a postverbal finite complement with a clause-final complementizer - are ungrammatical.

(5) (Bengali, from Bayer (1995))
   a. *Preverbal finite complement, clause-initial complementizer
      *chele-Ta [je [(or baba aS-be)]] Sune-che
      boy-CL Comp2 his father come-Fut hear-Pst
   b. *Postverbal finite complement, clause-final complementizer
      *chele-Ta Sune-che [(or baba aS-be) bOle]
      boy-CL hear-Pst his father come-Fut Comp1

Clausal Expletives:

(6) Mona yah jaan-tii hai [ki Rohit chant hai]
    Mona.f this know-Hab.f be.Prs.5g that Rohit.m cunning be.Prs.5g
    ‘Mona knows that Rohit is cunning.’

1.3 Extraposition

Finite clause complements of NP’s as well as relative clauses can be extraposed.

(7) Finite Clause Complements of NP’s:
   a. Base Position:
      mujhe [yah khabar [ki ve log naht: aa paa-ēge]] ke Dat this news.f that those people Neg come able-Fut.3MPI yesterday
      ‘I got the news that those people won’t be able to come yesterday.’
   b. Extraposed:
      mujhe [yah khabar kal mil-ii [ki ve log naht: aa me.Dat this news yesterday ‘find’-Pfv.f that those people Neg come paa-ēge] able-Fut.3MPI
      ‘I got the news yesterday that those people won’t be able to come.’

(8) Relative Clauses:
   a. Base Position:
      [ve log ve zyaadaa chai paa-te hÊ] kam so
      those people more tea drink-Hab.MPl be.Prs.Pl less sleep
      paa-te hÊ
      able-Hab.MPl be.Prs.Pl
      ‘Those people who drink a lot of tea aren’t able to sleep well.’
   b. Extraposed:
      [ve log] kam so paa-te hÊ ve zyaadaa chai
      those people less sleep able-Hab.MPl be.Prs.Pl Rel more tea
      paa-te hÊ
      drink-Hab.MPl be.Prs.Pl
      ‘Those people aren’t able to sleep well [who drink a lot of tea].’

(9) a. [That the girl [who John likes] is tall] is obvious.
   b. [That the girl is tall [who John likes]] is obvious.
   c. *[That the girl is tall [who John likes]] is obvious [who John likes].
(10) a. Base: 
[un jhuutho-ko [jo Ram-ne mujhe bataa-ye the] dohraa-naa] 
those lies-Acc Rel Ram-Erg me.Dat tell-Pfv.MPI be.Pst.MPI repeat-Inf 
galat hai 
wrong be.Prs.Sg 
‘To repeat the lies that Ram had told me’ is wrong.’
b. Extraposited: 
[un jhuutho-kot dohraa-naa] galat hai [jo Ram-ne mujhe those lies-Acc repeat-Inf wrong be.Prs.Sg Rel Ram-Erg me.Dat 
bataa-ye the], 
tell-Pfv.MPI be.Pst.MPI 
‘To repeat the lies that Ram had told me’ is wrong.’ 
(Lit. ‘[To repeat the lies] is wrong [that John had told me].’)

2 Rightward Scrambling

Rightward Scrambling = cases where a nominal argument appears to the right of the verb.

Any argument can be rightward scrambled:
   a. Subject:
      Ram-ko dhyaan-se dekh-aa thaa Sita-ko 
      Ram-Acc care-with see-Pfv be.Pst Sita-Dat 
      ‘Sita saw Ram carefully.’
   b. Direct Object:
      Sita-ne dhyaan-se dekh-aa thaa Ram-ko 
      Sita-Erg care-with see-Pfv be.Pst Ram-Acc 
      ‘Sita saw Ram carefully.’
   c. Indirect Object:
      Sita-ne vah kitaab di-i thii Ram-ko 
      Sita-Erg that book.f give-Pfv.f be.Pst.f Ram-Dat 
      ‘Sita had given that book to Ram.’
Quantificational Phrases can also appear postverbally. More than one argument may appear postverbally:
(12) Ram dhyaan-se paarh-eegaa [saarii kitaabê 
Ramb.m care-with read-Fut.MSg all.f books.f 
‘Ram will read all the books carefully.’ (from Mahajan (1997b):187)

More than one argument may appear postverbally:
(13) (from Mahajan (1997b):187)
   vah kitaab di-i thii Ram-ne Sita-ko 
   that book.f give-Pfv.f be.Pst.f Ram-Erg Sita-Dat 
   ‘Ram had given Sita that book.’

Rightward scrambled arguments can appear between a participial verb and the auxiliary verb.
(14) Sita-ne kitaab bhej-ii Ram-ko thii 
    Sita-Erg book.f send-Pfv.f Ram-Dat be.Pst.f 
    ‘Sita had sent the book to Ram.’

2.1 The Structural Position of Rightward Scrambled Phrases

2.1.1 Variable Binding

Rightward Scrambled phrases are lower than phrases to the left of the verb.
- Rightward scrambled phrases cannot bind variables in phrases to the left of the verb.
(15) (from Mahajan (1997b):189)
   a. Base sentence, WCO:
      ‘[us-ke bhaai]-ne [har-ek aadmii-ko], maar-aa 
      he-Gen.Obl brother-Erg every-one man-Acc hit-Pfv 
      ‘His brother hit every man.’
   b. Rightward Scrambling, WCO is not amnestied:
      ‘[us-ke bhaai]-ne maar-aa [har-ek aadmii-ko], 
      he-Gen.Obl brother-Erg hit-Pfv every-one man-Acc 
      ‘His brother hit every man.’
   c. Leftward Scrambling, WCO amnesty:
      [har-ek aadmii]-ko [us-ke bhaai]-ne maar-aa 
      every man-Acc he-Gen.Obl brother-Erg hit-Pfv 
      ‘Every man’s brother hit him.’ (Lit. ???His, brother hit every man.)
The same point holds of anaphoric binding.

(16) a. Base:

???Mona-ne [ek-duusre-kii, tasviirē] [Hrithik-aur Saif]-ko, dikhaa-ii
Mona-ER each-other-Gen.f pictures.f Hrithik-and Saif-Dat show-Pfv.f

???Mona showed each other ‘s pictures to [Hrithik and Saif,].’

b. Rightward Scrambling, new binding options do not become available:

???Mona-ne [ek-duusre-kii, tasviirē] dikhaa-ii [Hrithik-aur Saif]-ko, Mona-ER each-other-Gen.f pictures.f show-Pfv.f Hrithik-and Saif-Dat

’???Mona showed each other ‘s pictures to [Hrithik and Saif,].’

c. Leftward Scrambling, new binding options become available:

Mona-ne [Hrithik-aur Saif]-ko [ek-duusre-kii, tasviirē] dikhaa-ii
Mona-ER Hrithik-and Saif-Dat each-other-Gen.f pictures.f show-Pfv.f

’Mona showed Hrithik and Saif, each other ‘s pictures.’

Phrases to the left of the verb can bind variables and anaphors in rightward scrambled phrases.


Ram-ne [har-ek aadmii]-ko, lautaa-ii [us-kii, kitaab] Ram-Erg every-one man-Dat return-Pfv.f he-Gen.f book.f

’Ram returned every man, his book.’

b. Rightward Scrambling

Mona-ne [Hrithik-aur Saif]-ko dikhaa-ii [ek-duusre-kii, tasviirē]
Mona-ER Hrithik-and Saif-Dat show-Pfv.f each-other-Gen.f pictures.f

’Mona showed Hrithik and Saif, each other ‘s pictures.’

The presence and location of the finite auxiliary seems to make no difference to the variable binding possibilities.


a. Ram-ne [har-ek aadmii]-ko, lautaa-ii thii [us-kii, kitaab] Ram-Erg every-one man-Dat return-Pfv.f he-Gen.f book.f

’Ram had returned every man, his book.’

b. Ram-ne [har-ek aadmii]-ko, lautaa-ii [us-kii, kitaab] thii Ram-Erg every-one man-Dat return-Pfv.f he-Gen.f book.f

’Ram had returned every man, his book.

Generalization: Rightward Scrambling seems to not affect variable binding possibilities.

(19) The following structures have the same variable binding possibilities:

a. XP₁…V XP₂

b. XP₁…XP₂ V

(the relative location of the Auxiliary also seems to not make a difference.)

→ Rightward Scrambling does not take a phrase ‘higher’.

Mahajan’s analysis:

(20) a. Antisymmetry is assumed i.e. Hindi is underlyingly head-initial.

b. ‘Subj IO DO V’ is derived by the VP internal arguments moving to higher specifiers and the V staying in a low head position.

c. Rightward scrambling is generated by the verb moving higher than it does in the derivation of ‘Subj IO DO V’.

(21) Deriving: S IO V Aux DO

a. [IO [V DO]]

b. [Aux [IO V [IO DO]]]

c. [Aux [IO V [IO DO]]]

d. [Aux IO V [IO DO]]

e. [Aux IO V [IO DO]]

f. [Aux IO V [IO DO]]

The material inside the fronted AgrIOP does not actually c-command the DO.

→ so it is stipulated that the [Spec,AgrIO] c-commands whatever AgrIOP c-commands.

Not clear if this general enough to capture (19).

2.1.2 Condition C Effects

Rightward Scrambling does not change c-command relations as reflected by Condition C effects.

(22) (from Mahajan (1997b):198)

a. Base:

’Sita-ne use, [tumhaarii Ram,-vaalii kitaab] lautaa di-i Sita-Erg he.Dat your.f Ram-VAAL.f book.f return GIVE-Pfv.f

‘Sita returned him, your book about Ram,’
b. Rightward Scrambling: Condition C is not obviated

*Sita-ne Sita-Erg tumhaarii Ram-vaalii kitaab] use lautaa di-i Ram-VAAL.f book.f

‘Sita returned him, your book about Ram.’

c. Leftward Scrambling: Condition C is obviated

Sita-ne [tumhaarii Ram-vaalii kitaab] use lautaa di-i Sita-Erg your.f Ram-VAAL.f book.f he.Dat return GIVE-Pfv.f

‘Sita returned your book about Ram to him.’

(23) Generalization: Rightward scrambling does not change Condition C judgements.

→ If XP1 c-commands XP2 in (23b), it also c-commands XP2 in (23a).

a. XP1 . . . V . . . XP2
b. XP1 . . . XP2 . . . V

(the presence/location of the Auxiliary seems to not make a difference.)

2.1.3 Scope

Unscrambled sentences in Hindi are taken to be unambiguous displaying only surface scope.

(24) a. only every > three (from Mahajan (1997b):199)

sab [tiin chizê] khariid-êge everone three things buy-Fut.3MSg

‘Everyone will buy three things.’

b. some > every

[kisii chhaatr]-ne [har teacher]-ko card bhej-aa some student-Erg every teacher-Dat card.m send-Pfv.f

‘Some student sent every teacher a card.’

Leftward Scrambling makes the unambiguous (24a, b) ambiguous.

(25) a. three > every, every > three (from Mahajan (1997b):199)

[tiin chizê], sab t, khariid-êge three things everyone buy-Fut.3MSg

‘Everyone will buy three things.’

b. every > some, some > every

[har teacher]-ko, [kisii chhaatr]-ne t, card bhej-aa every teacher-Dat some student-Erg card.m send-Pfv.f

‘Some student sent every teacher a card.’

Rightward Scrambling does not produce ambiguity.

(26) a. only every > three (from Mahajan (1997b):200)

sab khariid-êge [tiin chizê] everone buy-Fut.3MSg three things

‘Everyone will buy three things.’

b. some > every

[kisii chhaatr]-ne card bhej-aa [har teacher]-ko some student-Erg card.m every teacher-Dat every teacher-Acc

‘Some student sent every teacher a card.’

(27) Generalization: Rightward scrambling does not change scope judgements.

→ the scope relation between XP1 and XP2 are the same in (27a) and (27b).

a. XP1 . . . V . . . XP2
b. XP1 . . . XP2 . . . V

(the presence/location of the Auxiliary seems to not make a difference.)

If the base order allows for scopal ambiguity, Rightward Scrambling also displays scopal ambiguity.

(28) (from Mahajan (1997b):201)

a. Base: (every > three, three > every)

sab-ko tiin kitaabâ pasand aa-ii everyone-Dat three books.f like come-Pfv.f

‘Everyone liked three books.’

b. Rightward Scrambling: (every > three, three > every)

sab-ko pasand aa-ii tiin kitaabâ everyone-Dat like come-Pfv.f three books.f

‘Everyone liked three books.’

2.2 Multiple Rightward Scrambling

More than one argument can follow the verb.

(29) (from Mahajan (1997b):201)

a. Subj V IO DO

Sita-ne dikhaa-ii Mohan-ko [ek kitaab] Sita-Erg show-Pfv.f Mohan-Dat a book.f

‘Sita showed a book to Mohan.’
b. Subj V DO IO
   Sita-ne dikhaa-ii [ek kitaab] Mohan-ko
   Sita-Erg show-Pfv.f a book.f Mohan-Dat
   ‘Sita showed a book to Mohan.’

The linear order of the arguments seems to reflect their structural relationships.

(30) Generalization: the structural relationships in (30a) and (30b) are the same i.e. XP₁ asymmetricaly c-commands XP₂ and XP₃ asymmetrically c-commands XP₄.
   a. XP₁ V XP₂ XP₃
   b. XP₁ XP₃ XP₂ V

2.2.1 Variable Binding

(31) Variable Binding:
   a. Subj V QPᵦ [his.....]₁₀ ᵙᵦ
      (also good: Subj QPᵦ [his.....]₁₀ V)
   b. Subj V [his.....]₁₀ QPᵦ ᵙᵦ
      (also good: Subj QPᵦ [his.....]₁₀ QPᵦ ᵙᵦ V)

(32) (schematized form of Mahajan (1997b):ex. 59, 60)

(33) WCO:
   a. *Subj V [his.....]₁₀ QPᵦ ᵙᵦ
      (also bad: *Subj [his.....]₁₀ QPᵦ ᵙᵦ V)
   b. Subj V [his.....]₁₀ QPᵦ ᵙᵦ
      (also bad: *Subj [his.....]₁₀ QPᵦ ᵙᵦ V)

(schematized form of Mahajan (1997b):ex. 61, 62)

The variable binding facts stay the same irrespective of the grammatical function of XP₂ and XP₃.

(34) a. XP₁ V XP₂ XP₃
   b. XP₁ XP₂ XP₃ V
   XP₃ c-commands XP₄ in both (34a, b).

(35) Sentence-final Subject:
   a. Variable Binding:
      DO V QPᵦ ᵙᵦ [his.....]ₑᵦ ᵙᵦ
      (also good: DO QPᵦ ᵙᵦ [his.....]ₑᵦ V)
   b. Variable Binding:
      *DO V [his.....]ₑᵦ QPᵦ ᵙᵦ
      (also bad: *DO [his.....]ₑᵦ QPᵦ ᵙᵦ V)

The Preverbal XP₁ c-commands both the postverbal arguments: XP₂ and XP₃.

(36) a. XP₂ V [his.....]ₓᵦ ᵙᵦ XP₃
   b. XP₁ XP₂ [his.....]ₓᵦ ᵙᵦ XP₃
   c. XP₂ V [his.....]ₓᵦ [his.....]ₓᵦ XP₃

(schematized form of Mahajan (1997b):ex. 64, 65)

2.2.2 Condition C

(37) a. XP₁ (= Pron) c-commands XP₂:
      *Pron V [...Name,...]ₓᵦ XP₃
      (Also bad: *Pron [...Name,...]ₓᵦ XP₂ V)
   b. XP₁ (= Pron) c-commands XP₃:
      *Pron V XP₂ [...Name,...]ₓᵦ V
      (Also bad: *Pron XP₂ [...Name,...]ₓᵦ V)

(38) a. XP₂ (= Pron) c-commands XP₃:
      *XP V Pron [...Name,...]ₓᵦ XP₃
      (Also bad: *XP Pron [...Name,...]ₓᵦ V)
   b. XP₃ (= Pron) does not c-command XP₂:
      XP V [...Name,...]ₓᵦ Pron
      (Also good: XP [...Name,...]ₓᵦ Pron, V)

(schematized form of Mahajan (1997b):ex. 69-70)

2.2.3 Scope

Rightward scrambling of more than argument leaves scopal relations untouched.

(39) a. Base: Subj QP₁: QP₂ V; Scope: QP₁ > QP₂
   b. Leftward Scrambling: QP₂, Subj QP₁, t V; Scope: QP₁ > QP₂, QP₂ > QP₁
   c. Rightward Scrambling: Subj V QP₁, QP₂; Scope: QP₁ > QP₂

(schematized form of Mahajan (1997b):ex. 71,72,74)
2.3 Summing Up

The syntactic effects of Rightward Scrambling are conspicuous by their absence.

(40) Generalization: Rightward scrambling does not change structural relationships between XP₁ and XP₂.
   a. XP₁ ... V ... XP₂
   b. XP₁ ... XP₂ ... V
   (the presence/location of the Auxiliary seems to not make a difference.)

Question: how are the various word orders to be derived while keeping structural relations between the various arguments unchanged?

Option 1: It’s a PF-Phenomenon.

Problems from wh-scope, to be discussed in detail later, militate against this approach.

(41) (from Mahajan (1997b):209)
   a. Immediately preverbal wh-in-situ → normal question interpretation
      Sita-ne dhyaan-se kis-ko dekh-aa thaa
      Sita-Erg care-with who-Acc see-Pfv be.Pst
      ‘Who did Sita see carefully?’
   b. Postverbal wh-XP → only echo question interpretation
      ???Sita-ne dhyaan-se dekh-aa thaa kis-ko
      Sita-Erg care-with see-Pfv be.Pst who-Acc
      ‘Sita saw carefully WHO?’

Option 2: Let Participles participate in leftward scrambling (like DPs). To capture the full range of facts, we will also have to allow for the finite auxiliary to be leftward scrambled.

→ but what about the wh-in-situ facts?

3 Extrapolation

(42) Complement Clause Extrapolation:
    Mona jaan-tii hai  [?(?i) Rohit chant hai]
    Mona.f know-Hab.f be.Prs.Sg that  Rohit.m cunning be.Prs.Sg
    ‘Mona knows that Rohit is cunning.’

(43) Finite Clause Complements of NP’s:
    a. Base Position:
       mujhe [yah khabar [ki ve log nahí: aa paa-égel]] kal
       me.Dat this news.f that those people Neg come able-Fut.3MPl yesterday
       ‘find’-Pfv.f
       ‘I got the news that those people won’t be able to come yesterday.’
    b. Extrapolated:
       mujhe [yah khabar] kal mil-ii [ki ve log nahí: aa
       me.Dat this news yesterday ‘find’-Pfv.f that those people Neg come
       paa-égel]
       able-Fut.3MPl
       ‘I got the news yesterday that those people won’t be able to come.’
       (from Subbarao (1984):100-101)

(44) Relative Clauses:
    a. Base Position:
       [ve log [jo zyaadda chai pii-te hÊ]] kam so
       those people Rel more tea drink-Hab.MPl be.Prs.Pl less sleep
       paa-te hÊ
       able-Hab.MPl be.Prs.Pl
       ‘Those people who drink a lot of tea aren’t able to sleep well.’
    b. Extrapolated:
       [ve log] kam so paa-te hÊ [jo zyaadda chai
       those people less sleep able-Hab.MPl be.Prs.Pl Rel more tea
       pii-te hÊ]
       drink-Hab.MPl be.Prs.Pl
       ‘Those people aren’t able to sleep well who drink a lot of tea.’
       (from Subbarao (1984):102-103)

Common Assumption: Extrapolated Clauses are right-adjointed to some projection, IP or higher (cf. Subbarao (1984), Mahajan (1990), Dayal (1996)).
3.1 Surface Location of Finite Complement Clauses

Finite complement clauses in Hindi cannot appear pre-verbally.

A clausal expletive *yaḥ* ‘it’ can appear in the object position of the verb that is taking the finite clause complement.

(45) a. Extraposition:

\[ \text{Mona (yaḥ) jaan-tii hai [ṭ(ki) Rohit chant hai]} \]

‘Mona knows that Rohit is cunning.’

b. No extraposition, Ungrammaticality:

\[ \text{‘Mona knows that Rohit is cunning.’} \]

A contentful noun may also appear:

(46) a. Extraposed clause, Complementizer must be present:

\[ \text{Mona [yaḥ baat] jaan-tii hai [ṭ(ki) Rohit chant hai]} \]

‘Mona knows this fact that Rohit is cunning.’

b. Extraposition is not obligatory, Complementizer must be present:

\[ \text{Mona [yaḥ [baat [ṭ(ki) Rohit chant hai]]] jaan-tii hai} \]

‘Mona knows this fact that Rohit is cunning.’

(see Bayer (1997):50 for similar facts in Bengali)

How far can the extraposed complement clause appear from its verb?

(47) a. \( V_{CP} \ CP \)

\[ \text{Mona-ne kah-aa [ṭ, ki vo aa-egii]} \]

‘Mona said that she will come.’

b. \( V_{CP} \ Aux \ CP \)

\[ \text{Mona-ne kah-aa thaa [ṭ, ki vo aa-egii]} \]

‘Mona had said that she will come.’

c. \( V_{CP} \ Aux, Aux, CP \)

\[ \text{Mona kah rahii thii [ṭ, ki vo aa-egii]} \]

‘Mona was saying that she will come.’

(48) a. \( V_{CP} \ CP \ Aux \)

\[ \text{Mona-Erg say-Pfv that she come-Fut.3FSg} \]

‘Mona said that she will come.’

b. \( V_{CP} \ CP \ Aux \)

\[ \text{Mona-Erg say-Pfv be.Pst that she come-Fut.3FSg} \]

‘Mona had said that she will come.’

c. \( V_{CP} \ Aux, Aux, CP \)

\[ \text{Mona kah rahii thii [ṭ, ki vo aa-egii]} \]

‘Mona was saying that she will come.’

(49) a. ?? [EXPL \( V_{CP} \ CP \) \( V_{matrix} \) Aux]

\[ \text{?mE [??(yaḥ) kah-aa] [ṭ, ki Billu paagal hai]} \]

‘I want to say that Billu is insane.’

b. ?? [EXPL \( V_{CP} \ CP \) \( V_{matrix} \) Aux]

\[ \text{Yusuf [[Renu-se (yeh) keh-ne]-kii koshish kar-naa]} \]

‘Yusuf.m Renu-Instr EXPL say-Inf.Obl-Gen.f attempt.f do-Inf want-Hab.MSg be.Prs.Sg that he her-with love do-Hab.MSg be.Prs.

‘Yusuf wants to try to tell Renu that he loves her.’

The complement clause must be right peripheral in a clause.

(50) Generalization: a finite clause complement can appear either at the right edge of its own non-finite clause or at the right edge of the smallest finite clause that contains its clause of origin.
The Role of Finiteness: no extraposition out of a finite clause

(51) a. No Extraposition: [NP [yeh baat [ki Mona soch-tii hai [ki Tina kanjoos hai]] this statement that Mona.f think-Hab.f be.Prs.Sg that Tina miser be.Prs.Sg sach hai true be.Prs.Sg]

The statement [that Mona thinks [that Tina is a miser]] is true.

b. Full Extraposition:

[yeh baat] sach hai [ki Mona soch-tii hai [ki Tina this statement true be.Prs.Sg that Mona.f think-Hab.f be.Prs.Sg that Tina kanjoos hai] miser be.Prs.Sg]

‘The statement is true [that Mona is a miser].’

c. Extrapolation of CP out of a finite clause CP:

[yeh baat [ki Mona soch-tii hai] sach hai [ki Tina this statement true be.Prs.Sg that Mona.f think-Hab.f be.Prs.Sg that Tina kanjoos hai] miser be.Prs.Sg]

‘The statement [that Mona thinks] is true [that Tina is a miser].’

3.2 Structural Location of the Extrapolated Clause

- Is the extrapolated Complement Clause an adjunct?
- Where is the extrapolated Complement Clause attached?

Mahajan (1990), Dayal (1996): Yes, the complement clause is extraposed from its θ-position to an IP-adjoined right peripheral position for reasons like the Case Resistance Principle. However, it reconstructs at LF.

Mahajan (1997a): No, the complement clause is not in an adjunct position. It is sitting in its θ-position, which is very low in the tree.

3.2.1 Extraction

It is possible to extract from extrapolated complement clauses.

(52) (from Mahajan (1997a): ex. 51, 52)

a. Argument Extraction:

kis-ko Ram-ne soch-aa [ki Mohan-ne t dekh-aa] who-Acc Ram-Erg think-Pfv that Mohan-Erg see-Pfv

‘Who did Ram think Mohan saw?’

b. Adjunct Extraction:

kaise Ram-ne soch-aa gaar.ii car.f t.hiik do-Pfv.f

‘How did Ram think that Mohan fixed the car?’

But extraction out of extrapolated elements is degraded:

(53) a. Who did John read [a book about t] yesterday?

(John read [a book about Dr. Kevorkian] yesterday.)

b. *Who, did John read [a book] yesterday [about t]?

(John read [a book] yesterday [about Dr. Kevorkian].)


Evidence: Presence of a clausal expletive forces a base-adjunction analysis, blocking the merger in θ-position followed by extrapolation.

(54) (from Mahajan (1997a): ex. i in fn. 18)

??kis-ko Ram-ne yah soch-aa who-Acc Ram-Erg EXPL think-Pfv that Mohan-Erg see-Pfv

‘Who did Ram think it that Mohan saw?’

But what about (53)?

Mahajan (1997a): No extrapolation, no problem. The CP is in complement position so we expect extraction to be possible.

(54) is to be analyzed as a Complex NP violation.
3.2.2 Condition C and Variable Binding

The extraposed finite complement clause seems to be rather low (at least at LF).

Dative objects can bind pronouns in the extraposed complement, and trigger Condn. C effects.

(55) (from Mahajan (1997a): ex. 53, 54)
   a. Variable Binding:
      Sita-ne [har aadmii]-se, kaah-aa [ki vo jiit-egaa]
      Sita-Erg every man-Instr say-Pfv that he win-will.3MSg
      ‘Sita told every man that he would win.’
   b. Condition C:
      *Sita-ne us-se, kaah-aa [ki Mohan, jiit-egaa]
      Sita-Erg he-Instr say-Pfv that Mohan win-will.3MSg
      ‘Sita told him, that Mohan would win.’

Mahajan (1997a): this is to be expected if the Complement Clause is in its θ-position.

Mahajan (1990), Dayal (1996): These tests apply at LF after the Complement Clause has been reconstructed into its θ-position.

Two Problems:

- The presence of an expletive is taken to block Merger in θ-position (cf. 54). This might presumably block reconstruction at LF. But scope judgements are unaffected by the presence of the expletive.

(56) a. Variable Binding:
   Sita-ne [har aadmii]-se, yah kaah-aa [ki vo jiit-egaa]
   Sita-Erg every man-Instr EXPL say-Pfv that he win-will.3MSg
   ‘Sita told every man that he would win.’
   b. Condition C:
      *Sita-ne us-se, yah kaah-aa [ki Mohan, jiit-egaa]
      Sita-Erg he-Instr say-Pfv EXPL that Mohan win-will.3MSg
      ‘Sita told him, that Mohan would win.’

→ Possibly, though the expletive is obligatorily replaced at LF by the complement clause.

- Mahajan (1997a) notes that in general it is not possible to reconstruct for variable binding purposes.

But this is not so clear.
Pure θ-scrambling does not reconstruct for binding purposes.
But θ-scrambling does reconstruct for Condition C and anaphoric binding purposes.
So one would expect variable binding to be possible too.

(57) a. [His, band] seems to [every Austinite, {l_j to be the best].
   b. [Which picture of him,] does every rockstar, think that his, fans treasure it?

● There may also be linearity considerations.

4 Interactions between Rightward Scrambling and Extraposition

A fact:

(58) ... V > DP > RC > CP

4.1 Rightward Scrambling and Extraposition

Extraposed Complement Clauses must follow Rightward Scrambled nominals.

(59) a. ... V DP CP
   b. *... V CP DP
   (schematized version of Mahajan (1997a): exs. 60, 61)

- Mahajan (1997a): The contrast in (59) reflects the structural relations between the DP and the CP, and the fact that the CP cannot move.

Rightward Scrambled DP’s c-command into the Extraposed Complement Clause.

(60) a. Variable Binding:
   ... V QP, [..Pron, ....]
   b. Condition C:
      *... V Pron, [..Pron, Name, ....]
   (schematized version of Mahajan (1997a): exs. 62, i in fn. 22)

4.2 Rightward Scrambling and Relative Clause Extraposition

Extraposed Relative Clauses must follow Rightward Scrambled nominals.

(61) Base: Subj IO DO V DO-RC
   a. Subj DO V IO DO-RC
   b. *Subj DO V DO-RC IO
Mahajan (1997a): Relative Clause Extraposition is stranding (presumably in the θ-position). The contrast in (61) reflects the structural asymmetry between the IO and the DO, and the fact that the DO-RC cannot move.

Rightward Scrambled DP’s c-command into the Extraposed Relative Clause.

(62) a. Variable Binding:
   \[ \text{Subj DO V QP}_{\theta{\text{ex}}} \quad \text{[...Controlling Pron ...]} \]
   b. Condition C:
   \[ \text{Subj DO V Pron}_{\theta{\text{ex}}} \quad \text{[...Controlling Name ...]} \]
   (schematized version of Mahajan (1997a):exs. 62, i in fn. 22)

What predictions are made about the following?

(63) Base: Subj IO DO V IO-RC
   a. Subj IO V DO IO-RC
   b. Subj IO V IO-RC DO [actually bad]

Possibly (63b) could be ruled out by requiring DP’s to move to a position higher than the base position occupied by the Relative Clause.

But then the contrast in (61) is not telling us anything about the IO > DO asymmetry, but about a contrast between DP’s and CP’s.

4.3 Relative Clause Extraposition and Complement Clause Extraposition

Extraposed Relative Clauses must precede Extraposed Complement Clauses.

(64) a. Subj IO V IO-RC CP
   b. *Subj IO V CP IO-RC
   (schematized version of Mahajan (1997a):exs. 70-71)

(65) a. Subj IO V Subj-RC CP
   b. *Subj IO V CP Subj-RC
   (schematized version of Mahajan (1997a):exs. 72-73)


The contrast in (64, 65) reflects the structural asymmetry between the IO and the DO, and the fact that CP’s cannot move.

Problem: In all these examples, the extraposed complement clause is the DO. The prediction seems to be that if the extraposed complement started off higher than the source of the extraposed Relative Clause, the CP > RC order should be possible.

(66) a. EXPL_{<θ} DO V DO-RC CP_{<θ}
    b. EXPL_{<θ} DO V CP_{<θ} DO-RC

References


