

1 Overview

Many languages permit considerable flexibility with respect to word order.

- (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. Subj DO IO V
Nur-ne kitaab Anjum-ko di-i
Nur-Erg book.f Anjum-Dat give-Pfv.f
 - c. IO Subj DO V
Anjum-ko Nur-ne kitaab di-i
Anjum-Dat Nur-Erg book.f give-Pfv.f
 - d. DO Subj IO V
kitaab Nur-ne Anjum-ko di-i
book.f Nur-Erg Anjum-Dat give-Pfv.f
 - e. IO DO Subj V
Anjum-ko kitaab Nur-ne di-i
Anjum-Dat book.f Nur-Erg give-Pfv.f
 - f. DO IO Subj V
kitaab Anjum-ko Nur-ne di-i
book.f Anjum-Dat Nur-Erg give-Pfv.f
 - g. The other 18 orders where the V precedes one or more arguments are also attested.
'Nur gave Anjum a book'

This word order flexibility is sometimes called 'scrambling'.

Ross (1967) had a stylistic re-ordering rule according to which two adjacent constituents could be permuted if they were constituents.

'Scrambling' does not have to be a unified phenomenon.

- (2) A potential breakup:
 - a. Object Shift: (1b)
 - b. Topicalization: (1c-f)
 - c. Rightward Movement: (1g)

1.1 Types of Scrambling

- (3) Scrambling within the clause:
 - a. Short Scrambling: below the subject
Nur-ne kitaab Anjum-ko di-i
Nur-Erg book.f Anjum-Dat give-Pfv.f
'Nur gave Anjum a book.'
 - b. Intermediate Scrambling: above the subject
Anjum-ko Nur-ne kitaab di-i
Anjum-Dat Nur-Erg book.f give-Pfv.f
'Nur gave Anjum a book.'
- (4) Long Scrambling: out of a finite clause
 - a. 'Topicalization'
Anjum-ko_i Yusuf soch-taa hai [ki Nur-ne t_i kitaab
Anjum-Dat Yusuf.m think-Hab.MSg be.Prs.Sg that Nur-Erg book.f
di-i]
give-Pfv.f
'Anjum, Yusuf thinks that Nur gave a book to.'
 - b. 'Interleaving'
Yusuf Anjum-ko_i soch-taa hai [ki Nur-ne t_i kitaab
Yusuf.m Anjum-Dat think-Hab.MSg be.Prs.Sg that Nur-Erg book.f
di-i]
give-Pfv.f
'Anjum, Yusuf thinks that Nur gave a book to.'

Some languages allow for topicalization/*wh*-movement out of finite clauses, but not scrambling.

- (5) German (from Müller and Sternefeld (1994):332)
- a. Topicalization out of a finite clause:
 Pudding_i sagt sie [_{CP}t_i' würde_j [_{IP} der Fritz t_i mögen t_j]]
 pudding said she would ART Fritz like
 'Pudding, she says that Fritz would like.'
 - b. *wh*-movement out of a finite clause:
 Was_i saght sie [_{CP}t_i' daß [der Fritz t_i mag]]?
 what says she that ART Fritz likes
 'What does she say that Fritz likes?'
 - c. *'Interleaving' Long Scrambling:
 *weil [_{IP}sie Pudding_i sagt [daß der Fritz t_i mag]]
 because she Pudding says that ART Fritz likes
 - d. *'Non Interleaving' Long Scrambling:
 *weil [_{IP}Pudding niemand sagt [_{CP}t_i' würde_j [_{IP} der Fritz t_i mögen t_j]]]
 because pudding nobody says would ART Fritz like
- (Assumption: Topicalization in German is to [Spec,CP])

1.2 Analytical Options

- (6) Scrambling
- a. Stylistic (PF) Phenomenon
 - b. Syntactic Phenomenon
 - Base Generation
 - i. Flat
 - ii. Configurational
 - Movement
 - A-Movement
 - A'-Movement
 - A/A'-Movement

(from Corver and van Riemsdijk (1994):13)

2 Nature of Movement

2.1 Kinds of Movement

What kind of movement does scrambling involve?

- (7) a. Always A' (cf. Gurtu (1992), Müller and Sternefeld (1994), Dayal (1994), Kidwai (2000))
 b. A mixed movement with A and A' properties (cf. Webelhuth (1989))
 c. Sometimes A and sometimes A', but not both simultaneously (cf. Mahajan (1990), Mahajan (1994))

2.2 Diagnostics for A/A'-Movement

Definitional/Intrinsic Properties

- (8) A-Movement
 a. What moves: DP
 b. Why: Case/EPP
 c. To: a case position such as [Spec,IP]
- (9) A'-Movement
 a. What moves: DP/PP etc.
 b. Why: *wh*-criterion/Scope/Discourse/??
 c. To: [Spec,CP] or some adjoined position

Correlational Properties

2.2.1 Weak Crossover

- (10) a. A-movement does not cause WCO:
 Every student_i seems to his_i mother [t_i to be intelligent].
 Which student_i t_i seems to his_i mother [t_i to be intelligent].
- b. A'-movement causes WCO:
 */???His_i mother loves every boy_i.
 */???Who_i does his_i mother love t_i?

However, the absence of WCO is not a reliable indicator of the absence of A'-movement (cf. Dayal (1994) and Kidwai (2000)).¹

- (11) (cf. Baltin (1985), Lasnik and Stowell (1991))
- a. Topicalization
John_i, his_i brother beat t_i.
 - b. Appositive Relative Clauses
Gerald_i, [who his_i mother loves t_i], is a nice guy.
 - c. *it*-clefts
It was John_i [who_i his mother was talking about t_i].
 - d. Parasitic Gaps
Who_i did you [speak with t_i] [before his_i wife could speak t_i]?

2.2.2 Quantifier Stranding

- (12) Quantifier Stranding (cf. Déprez (1989), Déprez (1994))
- a. A-movement can strand floating quantifiers:
The drug dealers have **all** been arrested.
 - b. A'-movement cannot:
*These drug dealers, the Mayor said that the police will **all** arrest.
*These are the drug dealers that the Mayor said that the police will **all** arrest.
(*Which drug dealers did the Mayor say that the police will all arrest?)

However, in West Ulster English *wh*-movement does seem to be able to strand quantifiers.

- (13) (from McCloskey (2000))
- a. What all did you get for Christmas?
 - b. What did you get all for Christmas?
 - c. Who all did you meet when you were in Derry?
 - d. Who did you meet all when you were in Derry?
- (14) (from McCloskey (2000))
- a. What all did he say (that) he wanted?
 - b. What did he say (that) he wanted all?
 - c. What did he say all (that) he wanted?

¹Topicalization and *it*-clefts seem to not involve SCO either.

- i. a. Himself_i, he likes t_i.
- b. It's him_i [that he_i thinks that Mary likes t_i].

2.2.3 Reconstruction

- (15) a. A-movement can, but does not have to, reconstruct.
- i. Scope Reconstruction:
A man from New Jersey is likely to win the lottery.
(a man > likely, likely > a man)
 - ii. Reconstruction is not forced (no Cond. C effects):
[A picture of John_i]_j seems to him_i [t_j to be on sale].
- b. A'-movement must reconstruct.
- i. Reconstruction is possible:
[Which picture of himself_i]_j does every artist_i admire t_j?
 - ii. Reconstruction is forced (Cond. C effects):
?/*Guess [which friend of John's_i]_j he_i visited t_j?

2.2.4 Parasitic Gaps

- (16) a. A-Movement does not license parasitic gaps:
*[The article]_i was filed t_i [without reading e_i].
- b. A'-Movement licenses parasitic gaps:
[Which article]_i did you file t_i [without reading e_i]?

However, the Hindi counterparts of parasitic gaps are an unreliable test because they seem to be licensed even without any movement.²

- (17) a. Base:
Ram-ne [binaa pg paṛhe] [vo kitaab]_i phēk di-i
Ram-Erg without reading that book.f threw GIVE-Pfv.f
'Ram threw that book away without reading it.'
- b. Short Scrambling:
Ram-ne [vo kitaab]_i [binaa pg paṛhe] t_i phēk di-i
Ram-Erg that book.f without reading threw GIVE-Pfv.f
'Ram threw that book away without reading it.'

→ not parasitic

²But see Mahajan (1994):317-320, and fn. 7 for another opinion.

An overt pronoun/DP can appear in place of the gap.

- (18) a. Base:
 Ram-ne [binaa use_{j/ai}/manual parhe] [vo kitaab]_i phêk di-i
 Ram-Erg without it.Acc/manual reading that book.f threw GIVE-Pfv.f
 'Ram threw [that book]_i away without reading it_j/the manual.'
 b. Short Scrambling:
 Ram-ne [vo kitaab]_i [binaa use_{j/ai}/manual parhe] t_i phêk di-i
 Ram-Erg that book.f without it.Acc/manual reading threw GIVE-Pfv.f
 'Ram threw [that book]_i away without reading it_{j/ai}/the manual.'

These gaps are licensed in the absence of movement. They are also licensed by short, intermediate, and long scrambling.

→ not clear what they tell us.

3 Short Scrambling

Short Scrambling = movement of the DO over the IO

Assumption: 'Subj IO DO Verb' is basic.

3.1 Anaphor binding under Reconstruction

Reciprocals are used in place of reflexives because reflexives are subject-oriented in Hindi.³

- (19) (from Bhatt and Anagnostopoulou (1996))
 a. unhône_i laRkiyô-ko_j [ek-duusre_{i/j} kii kitaabê] dî-î
 they girls-KO each-other Gen books give-Pfv
 'They_i gave the girls_j each-other_{i/j}'s books.'
 b. unhône_i [ek-duusre kii kitaabê]_{i/*j} laRkiyô-ko_j — dî-î
 they each-other Gen books girls-KO give-Pfv
 'They gave each-other's books to the girls.'
 c. [ek-duusre kii kitaabê]_{i/*j} unhône_i laRkiyô-ko_j — dî-î
 each-other Gen books they girls-KO give-Pfv
 'They gave each-other's books to the girls.'

³See Dayal (1994):251-253 for some arguments that the binding properties of reciprocals are distinct from that of reflexives, and that therefore the substitution of reciprocals for reflexives is not innocent.

Impossibility of coreference with the IO in (19b) →
 the scrambled NP cannot reconstruct to its base site,

Possibility of binding in (19c) →
 the scrambled NP can reconstruct to the site between the Subject and the IO.

3.2 Variable binding/WCO

Short scrambling amnesties WCO violations:

- (20) (from Bhatt and Anagnostopoulou (1996))
 a. *unhōne [us-kii maa]-ko_i har laRkaa_i lautaa-yaa
 they his mother-KO every boy return-Pfv
 *'They returned his_i mother every boy_i.'
 b. unhōne har laRkaa_i [us-kii maa]-ko_i — lautaa-yaa
 they every boy his mother-KO return-Pfv
 'They gave every boy_i to his_i mother.'

3.3 Reconstruction and Condition C

- (21) (from Bhatt and Anagnostopoulou (1996))
 a. us-ne_i us-ko_j [Aditya_{ai/*j/k}-kii kitaab] laūtaa di-i
 Dem-Erg Dem-KO Aditya's book.f return GIVE-Pfv.f
 'He_i returned him_j Aditya_{ai/*j/k}'s book.'
 b. us-ne_i [Aditya_{ai/j/k}-kii kitaab] us-ko_j — laūtaa di-i
 Dem-Erg Aditya's book.f Dem-KO return GIVE-Pfv.f
 'He_i gave Aditya_{ai/j/k}'s book to him_j.
 c. [Aditya_{ai/j/k}-kii kitaab] us-ne_i us-ko_j — laūtaa di-i
 Dem-Erg Aditya's book.f Dem-KO return GIVE-Pfv.f
 'He_i gave Aditya_{ai/j/k}'s book to him_j.

Short scrambling amnesties Cond. C violations

→ Reconstruction is not obligatory.

Scrambling past the subject does not amnesty Cond. C violations

→ Reconstruction is obligatory.

3.4 Object Shift

-ko marked Direct Objects in Hindi undergo obligatory object shift to a Subj-IO medial site (cf. Bhatt and Anagnostopoulou (1996)).

- (22) a. Ram-ne [_{VP} Anita-ko chitthii bhej-ii]
 Ram-ERG Anita-KO letter.f send-Pfv.f
 'Ram sent the letter to Anita.'
- b. Ram-ne chitthii-ko_i [_{VP} Anita-ko t_i bhej-aa]
 Ram-ERG letter-KO Anita-KO send-Pfv
 'Ram sent the letter to Anita.'
- c. #Ram-ne [_{VP} Anita-ko chitthii-ko_i bhej-aa]
 Ram-ERG Anita-KO letter-KO send-Pfv
 '#Ram sent Anita to the letter.'
 (NOT: Ram sent the letter to Anita.)

The oddness of (22c) has been taken to show that 'two *-ko* marked NP's cannot appear in a sentence.' (cf. Mohanan (1994), Kidwai (2000):78-80).

When the DO is a pronoun that refers to a human, it must be *-ko* marked → object shift is forced.

- (23) *vo* 'Dem' i.e. he/she/it/that
- a. Yusuf-ne [_{VP} Nina-ko vo di-yaa]
 Yusuf-Erg Nina-Dat Dem give-Pfv.m
 'Yusuf gave that/*him to Nina.'
- b. Yusuf-ne use/us-ko_i [_{VP} Nina-ko t_i di-yaa]
 Yusuf-Erg Dem.Dat/Dem.Obl-KO Nina-Dat give-Pfv
 'Yusuf gave him/her/???that to Nina.'

Object shifted direct objects behave the same as short scrambled direct objects w.r.t. the movement diagnostics.

- (24) a. WCO amnesty:
 unhōne har laRke_i-ko [us-kii maa]-ko_i ___ lauṭaa di-yaa
 they every boy-KO his mother-KO return GIVE-Pfv
 'They returned every boy_i to his, mother.'
- b. Condn. C Reconstruction not forced:
 us-ne_i [Aditya_{ni/j/k}-kii kitaab]-ko us-ko_j ___ lauṭaa di-yaa
 Dem-Erg Aditya-Gen.f book-KO Dem-KO return GIVE-Pfv
 'He_i gave Aditya_{ni/j/k}'s book to him_j.

- c. Reconstruction of Reciprocal not possible:
 unhōne_i [ek-duusre_{i/sj}-kii kita:bō]-ko laRkō-ko_j ___ di-yaa
 they each-other-Gen.f books-KO boys-KO give-Pfv
 'They_i gave each-other_{i/sj}'s books to the boys_j.'

An additional test:

- (25) Object shifted DO can bind a reciprocal IO
 Ram-ne hamē_i ek-duusre-ko_i t_i dikhaa-yaa
 Ram-Erg we.Dat each-other.Dat show-Pfv
 'Ram showed us to each other.'

3.5 Assimilating the tests

- anaphor binding by the IO into a DP/NP scrambled into the Subj-IO medial site is not possible, showing that reconstruction is impossible.
- A DP/NP scrambled into this site can variable-bind (i.e. no WCO), showing that reconstruction is not obligatory.
- Scrambling into this site also amnesties Condition C violations, again showing that reconstruction is not obligatory.
- Short scrambling is similar in most ways to Object Shift.

Conclusion: Movement to the Subj-IO medial site can only be an A/L-related movement and this site can only be an A-site (cf. Mahajan (1990)).

Corollary: no A'/non L-related position is available at this site. If A' sites are created by adjunction, this also indicates that adjunction cannot take place at this site.

4 Intermediate Scrambling

Intermediate Scrambling = movement beyond the subject but within the finite clause.

- (26) a. Subj DO V
Ram-ne roṭii khaa-i
Ram-Erg bread.f eat-Pfv.f
'Ram ate bread.'
- b. DO Subj V
roṭii Ram-ne khaa-i
bread.f Ram-Erg eat-Pfv.f
'Ram ate bread.'

Scrambling can cause ambiguity:

- (27) billi machhlii khaa-tii hai
cat.f fish.f eat-hab.f be.prs
'The cat eats fish.'
'Cat, The fish eats.'

4.1 Weak Crossover

Scrambling past the subject amnesties WCO violations.

- (28) WCO with Quantifiers
- a. ???[us-kii, behin]-ne [har larke]-ko, (sigreṭ pii-te hue) dekh-aa
his sister-Erg every boy-Acc cigarette smoking see-Pfv
'???His_i sister saw every boy_j (smoking a cigarette).'
- b. [har larke]-ko, [us-kii, behin]-ne t_i (sigreṭ pii-te hue) dekh-aa
every boy-Acc his sister-Erg cigarette smoking see-Pfv
'Every boy_j was seen (smoking a cigarette) by his_i sister.'
- (29) WCO with *wh*-XPs
- a. ???[us-kii, behin]-ne [kis larke]-ko, (sigreṭ pii-te hue) dekh-aa
his sister-Erg which boy-Acc cigarette smoking see-Pfv
'???Which boy_j did his_i sister see (smoking a cigarette).'
- b. [kis larke]-ko, [us-kii, behin]-ne t_i (sigreṭ pii-te hue) dekh-aa
which boy-Acc his sister-Erg cigarette smoking see-Pfv
'Which boy_j was seen (smoking a cigarette) by his_i sister.'

→ A-movement is an option.
(assuming that WCO amnesty → A-Movement)

4.2 Binding Theory Evidence

4.2.1 Condition A: Binding by the subject

Scrambling an anaphor past the subject does not affect binding possibilities.

- (30) XP Reflexive: *apne aap* 'self's self'
- a. Ram-ne apne-aap-ko maar-aa
Ram-Erg himself-Acc hit-Pfv
'Ram hit himself.'
- b. apne-aap-ko, Ram-ne t_i maar-aa
himself-Acc Ram-Erg hit-Pfv
'Ram hit himself.'
- (31) Reciprocal: *ek duusre* 'one another'
- a. unho-ne ek-duusre-ko maar-aa
they-Erg each-other-Acc hit-Pfv
'They hit each other.'
- b. ek-duusre-ko, unho-ne t_i maar-aa
each-other-Acc they-Erg hit-Pfv
'They hit each other.'
- (32) X⁰/Possessive Reflexive: *apne* 'self's'
- a. Ram-ne [apne bhaai]-ko maar-aa
Ram-Erg self's brother-Acc hit-Pfv
'Ram hit self's brother.'
- b. [apne bhaai]-ko, Ram-ne t_i maar-aa
self's brother-Acc Ram-Erg hit-Pfv
'Ram hit self's brother.'
- (33) Possessive Reciprocal: *ek duusre-ke* 'one another's'
- a. unho-ne ek-duusre-ke bhaaiō-ko maar-aa
they-Erg each-other-Gen brothers-Acc hit-Pfv
'They hit each other's brothers.'
- b. [ek-duusre-ke bhaaiō]-ko, unho-ne t_i maar-aa
each-other-Gen brothers-Acc they-Erg hit-Pfv
'They hit each other's brothers.'

→ scrambled phrase can reconstruct
→ A'-movement is an option.

4.2.2 Condition A: Binding into the subject

Mahajan (1994) presents contrasts like the following.

- (34) a. *[apne_i baccō]-ne Mohan-ko_i maar-aa
 self's children-Erg Mohan-Acc hit-Pfv
 '*Self's children hit Mohan.'
- b. ?_{AM}/_{VD} Mohan-ko_i [apne_i baccō]-ne t_i maar-aa
 self's children-Erg Mohan-Acc hit-Pfv
 '*Self's children hit Mohan.'

For Mahajan, the contrast in (34) shows the existence of an A-position before the subject.

Dayal (1994):248-249 and Kidwai (2000):128-129 note that Mahajan is unable to explain why (34) is degraded.

They relate the marginal acceptability of a referential/'logophoric' usage of X⁰ reflexives in Hindi.

Binding into XP Reflexive/Reciprocal subjects is never possible.

- (35) (from Dayal (1994):242)
- a. [apne-aap]-ne_i Mohan-ko_i maar-aa
 himself-Erg Mohan-Acc hit-Pfv
 '*Self's children hit Mohan.'
- b. Mohan-ko_i [apne-aap]-ne_i t_i maar-aa
 Mohan-Acc himself-Erg hit-Pfv
 '*Self's children hit Mohan.'
- (36) (from Kidwai (2000):31-32)
- a. *ek-duusre-ne_i [mohan aur sita]-ko_i maar-aa
 each-other-Erg Mohan and Sita-Acc hit-Pfv
 '*Each other hit Mohan and Sita.'
- b. *[mohan aur sita]-ko_i ek-duusre-ne_i maar-aa
 Mohan and Sita-Acc each-other-Erg hit-Pfv
 '*Each other hit Mohan and Sita.'

→ No A-position in front of subject from which binding can take place.

4.2.3 Condition C Effects

(37) Scrambling an R-expression past the subject:

- a. Base:
 *us-ne_i [Mohan-kii_i kitaab] parh-ii
 he-Erg Mohan-Gen.f book.f read-Pfv.f
 '*He_i read Mohan_i's book.'
- b. Scrambled sentence:
 *[Mohan-kii_i kitaab]_j us-ne_i t_j parh-ii
 Mohan-Gen.f book.f he-Erg read-Pfv.f
 '*He_i read Mohan_i's book.'

Intermediate scrambling does not cause Cond. C amnesty
 → Reconstruction is forced.

(38) Scrambling a pronoun past the subject:

- a. Base:
 [Mohan-kii_i behin]-ne us-ko_i dā:t-aa
 Mohan-Gen.f sister-Erg he-Acc scold-Pfv
 'Mohan's_i sister scolded him_i.'
- b. Scrambled sentence:
 *us-ko_i [Mohan-kii_i behin]-ne t_i dā:t-aa
 he-Acc Mohan-Gen.f sister-Erg scold-Pfv

The pronoun can't be fully reconstructing.

• Something like the copy theory seems necessary here.
 but then what about anaphors?

A similar contrast seems to exist in English.

- (39) a. Topicalization of anaphors:
 i. John_i likes himself_i.
 ii. Himself_i, John_i likes t_i.
- b. Topicalization of pronouns:
 i. John's_i sister likes him_i.
 ii. ???Him_i, John's_i sister likes t_i.

4.2.4 Some Linear Precedence Effects

Linear Precedence also seems to play a role in determining coreference possibilities.

(40) (from Dayal (1994):253)

a. DO > Pronoun

Ram-ne_i Mohan-ko_j [us-kii_{j/k/wi} kitaab] lauṭaa di-i
 Ram-Erg Mohan-Dat his-Gen.f book.f return GIVE-Pfv.f

'Ram returned to Mohan_i his_i book.'

b. [_{DP}.. Pronoun ..] > DO (Immediate Precedence)

Ram-ne_i [us-kii_{k/wj/wi} kitaab]_i Mohan-ko_j t_i lauṭaa di-i
 Ram-Erg his-Gen.f book.f Mohan-Dat return GIVE-Pfv.f

'Ram returned to Mohan_j his_{k/wj} book.'

c. [_{DP}.. Pronoun ..] > Subj > DO (Non Immediate Precedence)

[us-kii_{k/(?)j/wi} kitaab]_i Ram-ne Mohan-ko_j t_i lauṭaa di-i
 his-Gen.f book.f Ram-Erg Mohan-Dat return GIVE-Pfv.f

'Ram returned to Mohan_j his_{k/wj} book.'

(note: pronominal possessors have anti-subject orientation, which is unaffected by scrambling)

(41) a. [_{DP}.. Pronoun ..] > DO (Immediate Precedence)

[us-ke_{j/???i} baccō]-ne Ram-ko_i khuub maar-aa
 his children-Erg Ram-Acc lots hit-Pfv

'His_{i/???j} children hit Ram_j a lot.'

b. DO > [_{DP}.. Pronoun ..]

Ram-ko_i [us-ke_{i/j} baccō]-ne t_i khuub maar-aa
 Ram-Acc his children-Erg lots hit-Pfv

'His_{i/j} children hit Ram_j a lot.'

(42) A potentially related case (from Gambhir (1981):285-286)

a. [merii behin]_i aur [us-kaa pati] donō jaa-ēge
 my sister and her husband both go-Fut.3MPI

'My sister and her husband will both go.'

b. [us-kaa_{i/wj} pati] aur [merii behin]_j donō jaa-ēge
 her husband and my sister both go-Fut.3MPI

'Her husband and my sister will both go.'

- A pronominal DP cannot refer to an R-expression that immediately follows the smallest DP that contains the pronominal DP. (cf. Dayal (1994):246-254, Rule II in Kidwai (2000):125-128)

Further embedding seems to help:

- (43) [[us-kii_{i/j} pehlī biivīi]-ke baccō]-ne Ram-ko_i khuub maar-aa
 his first wife-Gen children-Erg Ram-Acc lots hit-Pfv
 'His_{i/j} first wife's children hit Ram_j a lot.'

4.3 Webelhuth's Paradox and Mixed Positions

Intermediate Scrambling seems to have both A (WCO amnesty) and A'-properties (Reconstruction).

Webelhuth (1989) takes this as an argument for a mixed position, with A and A' properties.

(44) Simultaneous licensing of a Parasitic Gap and WCO Amnesty

Peter hat [jeden Gast]_i [ohne t_i anzuschauen] [seinem_i Nachbarn] t_i vorgestellt
 Peter has every guest without at-to-look his neighbour introduced

'Peter introduced every guest to his neighbour without looking at.'

(45) Mahajan's analysis without a mixed position

Peter hat [jeden Gast]_i [ohne t_i anzuschauen] t_i [seinem_i Nachbarn] t_i
 Peter has every guest without at-to-look his neighbour
 vorgestellt
 introduced

'Peter introduced every guest to his neighbour without looking at.'

Step 1: 'argument shift' / A-movement - WCO amnesty

Step 2: 'XP adjunction' / A'-movement - Parasitic Gap licensing

Lee and Santorini (1994) argue that Mahajan (1990) / Mahajan (1994)'s proposal does not constitute a full solution to Webelhuth's paradox.

Mahajan's argument against mixed positions:

- (46) a. *[… Pron_i …] wh-XP_i …
(WCO violation)
- b. wh-XP_i [… Pron_i …] t_i …
(WCO amnesty)
- c. [… Pron_j …]_i [Anaph_i NP] …
(Reflexive Binding)
- d. [Anaph_i NP]_k [… Pron_j …]_i t_k …
(Reflexive Binding preserved through reconstruction)
- e. *[… Pron_j …]_i [Anaph_i wh-XP]_j …
(Reflexive Binding, but WCO)
- f. *[Anaph_i wh-XP]_j [… Pron_j …]_i t_j …
(Reflexive Binding preserved through reconstruction, but WCO)

Mahajan takes the impossibility of (46e, f) to show that mixed positions do not exist.

Given the plausible assumption that the *wh*-phrase and the possessive anaphor cannot take scope separately at LF (cf. Safir (1999)), the kind of position Mahajan is arguing against is a logical impossibility.

5 Long Scrambling

Long scrambling = movement out of a finite clause

- (47) (from Gambhir (1981):303-304)
- a. A inquires of B if he knows what time the stores open. B replies:
dukaanē, [meraā khayal hai [ki t_i nau bajē khul jaa-tii hē]]
stores.f my idea be.Prs.Sg that 9 o'clock open GO-Hab.f be.Prs.Pl
'The stores, I think, open at 9 o'clock.'
- b. Two friends are talking about their common friend, Ramesh. One of them adds:
Ramesh-ko, [mē-ne sun-aa hai [ki t_i bank-mē naukrii mil
Ramesh-Dat I-Erg hear-Pfv be.Prs.Sg that bank-in job.f 'find'
gayii hai]]
GO-Pfv.f be.Prs.Sg
'Ramesh, I heard, has got a job in a bank.'

Long Scrambling can target almost any position except the immediately pre-complementizer position.

- (48) a. MSubj MObj V Comp ESubj
[mē-ne Sita-se kah-aa [ki Ramesh-ko bank-mē naukrii mil gayii
I-Erg Sita-Instr say-Pfv that Ramesh-Dat bank-in job.f 'find' GO-Pfv.f
hai]]
be.Prs.Sg
'I told Sita that Ramesh has got a job in a bank.'
- b. ESubj, MSubj MObj V Comp t_i
Ramesh-ko, [mē-ne Sita-se kah-aa [ki t_i bank-mē naukrii mil gayii
Ramesh-Dat I-Erg Sita-Instr say-Pfv that bank-in job.f 'find' GO-Pfv.f
hai]]
be.Prs.Sg
'Ramesh, I told Sita, has got a job in a bank.'
- c. ??MSubj ESubj, MObj V Comp t_i
??[mē-ne Ramesh-ko Sita-se kah-aa [ki t_i bank-mē naukrii mil
I-Erg Ramesh-Dat Sita-Instr say-Pfv that bank-in job.f 'find'
gayii hai]]
GO-Pfv.f be.Prs.Sg
'Ramesh, I told Sita, has got a job in a bank.'
- d. ???MSubj MObj ESubj, V Comp t_i
???[mē-ne Sita-se Ramesh-ko kah-aa [ki t_i bank-mē naukrii mil
I-Erg Sita-Instr Ramesh-Dat say-Pfv that bank-in job.f 'find'
gayii hai]]
GO-Pfv.f be.Prs.Sg
'Ramesh, I told Sita, has got a job in a bank.'
- e. *MSubj MObj V ESubj, Comp t_i
*[mē-ne Sita-se kah-aa Ramesh-ko [ki t_i bank-mē naukrii mil
I-Erg Sita-Instr say-Pfv Ramesh-Dat that bank-in job.f 'find'
gayii hai]]
GO-Pfv.f be.Prs.Sg

The ungrammaticality of (48e) is not due to a putative V-C adjacency requirement.

- (49) MSubj V MObj Comp ESubj
[mē-ne kah-aa Sita-se [ki Ramesh-ko bank-mē naukrii mil gayii
I-Erg say-Pfv Sita-Instr that Ramesh-Dat bank-in job.f 'find' GO-Pfv.f
hai]]
be.Prs.Sg
'I told Sita that Ramesh has got a job in a bank.'

Generalization: material from the embedded clause cannot intervene between matrix V and C⁰, but may otherwise appear in the matrix clause.

5.1 Properties of Long Scrambling

5.1.1 No WCO Amnesty

(50) No WCO amnesty

a. Base:

*[[us-kii_i behin]-ne soch-aa [ki Ram-ne [kaun-saa/har aadmii] dekh-aa]]
his sister-Erg think-Pfv that Ram-Erg which/every man see-Pfv

*'Which man_i did his_i sister think that Ram saw t_i?'
*His_i sister thought that Ram saw [every man]_i.'

b. Long Scrambling:

*[kaun-saa/har aadmii]_i [[us-kii_i behin]-ne soch-aa [ki Ram-ne t_i
which/every man his sister-Erg think-Pfv that Ram-Erg
dekh-aa]]
see-Pfv

*'Which man_i did his_i sister think that Ram saw t_i?'
*His_i sister thought that Ram saw [every man]_i.'

→ Long Scrambling is not A-movement.

5.1.2 Reconstruction Effects

(51) Anaphors

a. Base:

[Sita_j soch-tii hai [ki Ram_i apne-aap-ko_{i/*j} pasand kar-taa
Sita think-Hab.f be.Prs.Sg that Ram himself-Acc like do-Hab.MSg
hai]]
be.Prs.Sg

'Sita thinks that Ram likes himself.'

b. Scrambled:

apne-aap-ko_{i/*j} [Sita_j soch-tii hai [ki Ram_i t_i pasand
himself-Acc Sita think-Hab.f be.Prs.Sg that Ram like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Sita_j thinks that Ram_i likes himself_{i/*j}.'

→ Reconstruction is forced. Matrix binding not possible.

(52) Possessive Anaphors

a. Base:

[Sita_j soch-tii hai [ki Ram_i [apnii behin]-ko_{i/*j} pasand
Sita think-Hab.f be.Prs.Sg that Ram self's sister-Acc like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Sita thinks that Ram likes himself.'

b. Scrambled:

[apnii_{i/??j} behin]-ko_k [Sita_j soch-tii hai [ki Ram_i t_k pasand
self's sister-Acc Sita think-Hab.f be.Prs.Sg that Ram like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Sita_j thinks that Ram_i likes himself_{i/??*j}.'

→ Reconstruction is forced, Matrix binding degraded.

(53) Pronouns

a. Base:

[Sita_i soch-tii hai [ki Ram_j us-ko_{i/*j} pasand kar-taa
Sita think-Hab.f be.Prs.Sg that Ram himself-Acc like do-Hab.MSg
hai]]
be.Prs.Sg

'Sita_i thinks that Ram likes her_i.'

b. Scrambled:

us-ko_{k/*i/??j} [Sita_j soch-tii hai [ki Ram_i t_i pasand kar-taa
himself-Acc Sita think-Hab.f be.Prs.Sg that Ram like do-Hab.MSg
hai]]
be.Prs.Sg

'Her_{k/??j} Sita_j thinks that Ram likes.'

→ Weak Condition C effect from surface position

(54) Pronominal Possessors

a. Base:

[Sita_i soch-tii hai [ki Ram_j [us-kii_{i/*j} behin]-ko pasand
Sita think-Hab.f be.Prs.Sg that Ram his sister-Acc like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Sita_i thinks that Ram likes her_j sister.'

b. Scrambled:

[us-kii_{k/?j/*i} behin]-ko_i [Sita_j soch-tii hai [ki Ram_i t_i pasand
his sister-Acc Sita think-Hab.f be.Prs.Sg that Ram like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Her_{k/?j} sister, Sita_j thinks that Ram likes.'

→ Binding options unaffected by movement

(55) R-Expressions

a. Base:

[vo_i soch-tii hai [ki vo_j Mona-ko_{*i/*j} pasand kar-taa
she think-Hab.f be.Prs.Sg that he himself-Acc like do-Hab.MSg
hai]]
be.Prs.Sg

'She_i thinks that he_j likes Mona_k.'

b. Scrambled:

Mona-ko_{k/*i/*j} [vo_i soch-tii hai [ki vo_i t_k pasand kar-taa
himself-Acc Sita think-Hab.f be.Prs.Sg that he like do-Hab.MSg
hai]]
be.Prs.Sg

'Mona_k, she_i thinks that he_j likes.'

→ Strong Condition C effect w.r.t. matrix subject, Reconstruction forced.

(56) R-Expression Possessors

a. Base:

[vo_i soch-tii hai [ki vo_j [Mona-kii_{i/*j} behin]-ko pasand
she think-Hab.f be.Prs.Sg that she Mona-Gen.f sister-Acc like
kar-tii hai]]
do-Hab.FSg be.Prs.Sg

'She_i thinks that she_j likes Mona's_k sister.'

b. Scrambled:

[Mona-kii_{/?j/*i} behin]-ko_i [vo_i soch-tii hai [ki vo_j t_k pasand
Mona-Gen.f sister-Acc she think-Hab.f be.Prs.Sg that she like
kar-tii hai]]
do-Hab.FSg be.Prs.Sg

'Mona's_{k/?j/*i} sister, she_i thinks that she_j likes.'

Clearer examples:

(57) a. [Mona's_j sister]_i [she_{*j}.....V [he..... t_i

[Mona-kii_{*i} behin]-ko_i [vo_i soch-tii hai [ki vo_j t_k pasand
Mona-Gen.f sister-Acc she think-Hab.f be.Prs.Sg that he like
kar-taa hai]]
do-Hab.MSg be.Prs.Sg

'Mona's_{*i} sister, she_i thinks that he_j likes.'

b. [Mona's_{/?j} sister]_i [he.....V [she_j..... t_i

[Mona-kii_{/?j} behin]-ko_i [vo_i soch-taa hai [ki vo_j t_k pasand
Mona-Gen.f sister-Acc she think-Hab.f be.Prs.Sg that he like
kar-tii hai]]
do-Hab.MSg be.Prs.Sg

'Mona's_{/?j} sister, he_i thinks that she_j likes.'

→ Strong Condition C effect w.r.t. matrix subject, Reconstruction forced.

→ Weak Condition C effect w.r.t. embedded subject.

Summa: Long Scrambling involves obligatory reconstruction, to at least the edge of the embedded clause and perhaps lower depending upon the base position of the scrambled phrase.

5.2 Floating Quantifiers

WCO was one test that grouped intermediate and short scrambling together.

Floating Quantifiers is another.

(58) Short/Intermediate scrambling allows floating quantifiers

a. Base: Subj IO [_{DO} Q DO-NP] V

Ram-ne Mohan-ko [saarii kitaabē] lauṭaa di-i
 Ram-Erg Mohan-Dat all.f books.f return GIVE-Pfv.f
 'Ram returned all the books to Mohan.'

b. Base + Local Movement of DO-NP: Subj IO DO-NP_i [_{DO} Q t_i] V

Ram-ne Mohan-ko kitaabē_i [saarii t_i] lauṭaa di-i
 Ram-Erg Mohan-Dat books.f all.f return GIVE-Pfv.f
 'Ram returned all the books to Mohan.'

c. Short Scrambling of DO-NP: Subj DO-NP_i IO [_{DO} Q t_i] V

d. Intermediate Scrambling of DO-NP: DO-NP_i Subj IO [_{DO} Q t_i] V

e. Short Scrambling of DO: Subj [_{DO} Q DO-NP]_i IO t_i V

f. Short Scrambling of DO + Local Movement of DO-NP:
 Subj DO-NP_j [_{DO} Q t_j]_i IO t_i V

g. Intermediate Scrambling of DO-NP in (58f):

DO-NP_j Subj [_{DO} Q t_j]_i IO t_i V

h. Intermediate Scrambling of DO: [_{DO} Q DO-NP]_i Subj IO t_i V

i. Intermediate Scrambling of DO + Local Movement of DO-NP:
 DO-NP_j [_{DO} Q t_j]_i Subj IO t_i V

(extension of Dayal (1994):ex. 30)

(59) Long scrambling does not allow floating quantifiers

a. [Subj₁ V₁ [NP₁ Subj₂ V₂ [[Q t₁]]]]

(Also possible: [Subj₁ V₁ [[Q NP]_j Subj₂ V₂ [... t_j]])]

b. [NP₁ Subj₁ V₁ [Subj₂ V₂ [[Q t₁]]]]

(Also possible: [[Q NP]_j Subj₁ V₁ [Subj₂ V₂ [... t_j]])]

c. *[NP₁ Subj₁ V₁ [[Q t₁]_j Subj₂ V₂ [... t_j ...]]]

(extended schematization of Dayal (1994):ex. 32)

Generalization: Floating Quantifiers can only be stranded in the clause where the QP originates.

6 Putting it together

Diagnostic	Short Scrambling	Intermediate Scrambling	Long Scrambling
WCO	Amnesty	Amnesty	No Amnesty
Floating Quantifiers	Yes	Yes	No
Condn. C Reconstruction	No	Yes	Yes
Condn. A Reconstruction	No	Yes	Yes
New Binding Possibilities	Yes	No?	No

The absence of WCO effects with intra-clausal scrambling is taken by Bresnan (1997) and Dalrymple et al. (2001) to show that intra-clausal scrambling does not leave traces.

But this cannot be all, given the reconstruction facts.

(60) Mahajan's classification:

a. Short scrambling: Argument Shift (A)

b. Intermediate scrambling: Argument Shift (A)/XP Adjunction (A')

c. Long Scrambling: XP Adjunction (A')

• We are left with a three-way distinction, though not the one in Mahajan (1990)/Mahajan (1994).

(61) a. Short scrambling: Object Shift (A)

b. Intermediate scrambling: Peculiar non-WCO triggering A' movement

c. Long Scrambling: XP Adjunction (A')

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