Scrambling in Bengali: An A-/A'-Movement Distinction

SREYOSHI BASU, *University of Rochester*

ABSTRACT

Bengali is an SOV language (Bhatt & Dayal 2007), known for its flexible word-order. Elements in a phrase can be moved to other positions, both within and across clausal boundaries, in a process called scrambling (David 2015). This study aims to provide a comprehensive description of scrambling in Bengali and argues that scrambling manifests in two types of movement in this language: A- and A'-. It further argues that the type of scrambling involved (A- vs. A'-) is predictable from the syntactic environment based on the following generalization: A'-movement is possible only when a Spec,CP position is available as a landing site. Given this, scrambling in Bengali supports the position-based approach to the A-/A'- distinction, recently argued for in Keine (2018). Building on previous literature on scrambling in other SOV languages, such as Hindi (Keine 2018; Dayal 1994; Mahajan 1990, 1994) and Japanese (Sato & Goto 2014; Saito 1985, 1992), this paper investigates scrambling in four syntactic environments, each with a different scrambling profile: 1) vP-internal movement; 2) clause-internal movement; 3) cross-non-finite clause movement; and 4) cross-finite clause movement. Two well-established tests are used to discern A-movement from A'-movement: i) A-movement can obviate weak crossover effects and lead to reciprocal binding; ii) A'-movement can reconstruct for Condition A. It is demonstrated that vP-internal scrambling is unambiguously A-movement, while clause-internal scrambling may be both A- and A'-movement. Additionally, cross-clausal movement out of non-finite clauses can be both A- and A'-movement, but cross-clausal movement out of finite-clauses is unambiguously A'-movement.

1 Introduction

1.1 Linguistic Description

Bengali (endonym: Bangla; ISO: *ben*) is the national language of Bangladesh and the official language of the Indian states of West Bengal and Tripura (David 2015; Lewis 2009). It belongs to the Indo-Aryan sub-group of the Indo-European language family (David 2015). Spoken Bangla exhibits considerable dialect variation, with two of the most widely documented varieties being Kolkata Colloquial Bengali (KCB) and Dhaka Colloquial Bengali (DCB), which represent the standardized dialects of Kolkata and Dhaka, respectively. (David 2015). This project focuses on an analysis of KCB. [1]

[1] All data that is not cited is provided by the author, a native speaker of Bengali.

Bangla is an SOV language with post-positions and a head-final clause structure (Thompson 2020; Bhatt & Dayal 2007). The basic word order of a declarative sentence follows the pattern: subject, indirect object, direct object, and verb (S IO DO V), as shown in (1). Auxiliaries and modals typically follow the main verb (David 2015).

(1) Apu Keya-ke ek-ta chobi dekha-lo - [S IO DO V]
Apu.NOM Keya-ACC one-CLF picture show-PST
'Apu showed Keya a picture.'

1.2 Scrambling in Bangla

Bangla has a fairly flexible word order, allowing elements of a phrase to be moved to other positions in a process known as scrambling. In free-word-order languages, scrambling can be defined as the process that allows for the derivation of non-canonical word-orders via movement of constituents from their base-generated positions to other syntactic positions (Cho 1994; Saito 1985). Scrambling operations in Bangla are generally optional, and the version of the sentence without movement, that is, the basic word order, is always available (David 2015; Keine 2018). However, despite syntactic optionality, such movement of constituents often "alter[s] the information structure in some salient way" (David 2015). For instance, scrambling is often used to achieve variable emphasis and 'contrastive focus interpretations' (Thompson 2004; Syed 2017). Focus tends to fall on the word occupying the first position in the clause, while the second position serves to emphasize the meaning of the first word. A transitive sentence like *I have read the story* can be scrambled in six different ways, as shown in (2).

(2) a. ami golpo-ta pod-e-chi - [SOV]
1SG.NOM story-CLF read-PRF-PRS
'I have read the story.'
b. ami pod-e-chi golpo-ta - [SVO]
1SG.NOM read-PRF-PRS story-CLF
'I have *read* the story.'
c. golpo-ta ami pod-e-chi - [OSV]
story-CLF 1SG.NOM read-PRF-PRS
'The story, *I* have read.'
d. golpo-ta pod-e-chi ami - [OVS]
story-CLF read-PRF-PRS 1SG.NOM
'The story, I have *read*.'
e. pod-e-chi ami golpo-ta - [VSO]
read-PRF-PRS 1SG.NOM story-CLF
'I have *read it*, the story.'
f. pod-e-chi golpo-ta ami - [VOS]
read-PRF-PRS story-CLF 1SG.NOM
'I have read it, *the story*.'

Additionally, scrambling in Bangla allows constituents to undergo both leftward and rightward-movement. The subject or object may be moved to clause-initial or clause-final positions to highlight different "discourse relevant information," such as distinguishing between new or old information or emphasizing background versus foreground information (David 2015). Clause-initial (3-a) or clause-final (3-b) positions are generally indicative of emphasis (Thompson 2004), as demonstrated in the examples below:

(3) a. **gari-ta** ami **t**$_1$ chali-e-chi gotokal
car-CLF 1SG.NOM **t**$_1$ drive-PRF-PRS yesterday
'The car I drove yesterday.'

b. am-ar **t**$_1$ ach-e **ek-ti** **darun dharona**
1SG-GEN **t**$_1$ be-PRS one-CLF.DIM great idea
'I have a great idea.' (from David 2015:248)

Existing studies on Bangla syntax have explored topics such as headedness and clause structure. For instance, according to Simpson and Bhattacharya (2003), Bangla has an underlying SVO structure. They argue that wh-questions and surface-SOV structures are derived through overt movement as opposed to an underlying SOV structure that combines wh-in-situ constructions and covert movement. Bhatt and Dayal (2007) argue against this claim, drawing upon rightward remnant movement to make their argument. Islam (2016) also offers a critical evaluation of the aforementioned claim, highlighting the need for covert movement and arguing that the analysis for Bangla remains wh-in situ. Descriptions of Bangla's free word order can be found in the literature (David 2015; Bhatt & Dayal 2007; Thompson 2004); however, the type of movement (A- or A'-) involved in different scrambling environments, both within and across clausal boundaries, the syntactic positions targeted by these movements, and the reasons for differing properties across various scrambling environments have yet to be adequately described for Bangla.

Therefore, this study aims to provide a comprehensive description of scrambling in Bengali by examining the type of movement and the syntactic positions targeted by that movement. To that end, this research builds on existing literature on scrambling in other SOV languages, such as Hindi (Keine 2018; Mahajan 1990, 1994; Dayal 1994) and Japanese (Saito 1992, 1985; Sato & Goto 2014). The analysis focuses on scrambling in four different syntactic environments: 1) vP-internal movement, 2) clause-internal movement, 3) cross-non-finite clause movement, and finally, 4) cross-finite clause movement.

Movement in Bangla manifests as either A- or A'- movement. A-movement can feed binding relations, while A'-movement cannot. Therefore, in Section 2, two well-established tests that discern A-movement from A'-movement are used to identify the types of movement involved in each scrambling environment:

i) Only A-movement can obviate weak crossover effects and lead to reciprocal binding, and ii) Only A'-movement can reconstruct for Condition A of binding.[2]

This study demonstrates that vP-internal scrambling is unambiguously A-movement, while clausal-internal movement can be both A- or A'-movement. Furthermore, cross-clausal scrambling out of non-finite clauses can exhibit both A- and A'-properties, while cross-clausal scrambling out of finite clauses is A'-movement. Additionally, in Section 3, it is argued that the distribution of movement types in different syntactic environments aligns with the position-based theory of the A-/A'-distinction that was established in Keine (2018). Specifically, it is argued that the type of movement, A- vs. A'-, is predictable from the scrambling environment and that A'-movement is only available in scrambling environments that can provide an available Spec,CP position as a landing site for such movement. Finally, potential instances of hyperraising out of finite clauses resulting from variations in grammaticality judgments are identified, and scope for further research is provided in Section 4.

1.3 A- and A'-Movement in Bangla

The movements involved in Bangla scrambling can be of two types: A- or A'-. The type of movement involved in scrambling can be identified using the following properties:

1. Only A-movement is known to obviate weak-crossover effects and lead to binding of reciprocal pronouns

2. Only A'-movement can reconstruct for Condition A of binding

An illustration of weak crossover obviation and reciprocal binding in Bangla is provided in (4) and (5), respectively:

(4) ***Weak crossover obviation***

a. o-r_1 ma **prot-ek-meye-ke$_2$** pochhondo kar-e
3SG-GEN mother.NOM **every-girl-ACC** like do-PRS
'Her mother likes every girl.' (bound reading impossible)

b. **prot-ek-meye-ke$_1$** o-r_1 ma **t_1** pochhondo kar-e
every-girl-ACC 3SG-GEN mother.NOM **t_1** like do-PRS
'For every girl x, x's mother likes x.'

In (4-a), the pronoun *or* 'his/her' cannot be co-indexed with *protek meye* 'every girl,' making a bound reading impossible. A-movement of the object, *protek meye* 'every girl' over

[2] A binding relation between two elements, A and B, is established when A c-commands B *and* both A and B are co-indexed in their binding domain. The following conditions govern the distribution of anaphors, pronouns, and R-expressions in their binding domains (from Carnie 2021):
Condition A: An anaphor must be bound in its binding domain.
Condition B: A pronoun must be free in its binding domain.
Condition C: An R-expression must be free.

the subject, *or ma* 'her mother', enables co-indexing and thereby binding of the subject-internal pronoun. This allows for a bound reading of the sort 'every girl is liked by her (own) mother' in (4-b).

(5) ***Reciprocal binding***

a. *ak-e-opor-er ma **Anup-aur-Pratap-ke** daak-lo
each other-GEN mother.NOM **Anup-and-Pratap-ACC** call-PST
'*Each other's mother, Anup and Pratap called.'

b. **Anup-aur-Pratap-ke** [ake-opor-er ma **t_1**] daak-lo
Anup-and-Pratap-ACC each.other-GEN mother.NOM **t_1** call-PST
'Anup and Pratap, each other's mother called, t_1.'

(5-a) is ungrammatical because the reciprocal pronoun (anaphor) *ake opor er* 'each other's' is unbound in its binding domain, leading to a violation of Condition A. A-movement of 'Anup and Pratap' in (5-b) provides a c-commanding antecedent to the reciprocal pronoun and enables binding.

Wh-movement is an instance of A'-movement, involving the movement of a question-word from a theta-position into a non-argument position for interpretation (Dayal 1994). That A'-movement cannot obviate weak crossover nor lead to reciprocal binding is demonstrated in (6) and (7), respectively.

(6) ***Weak crossover obviation***

a. ***o-r_1*** ma kon-meye-ke_1 bok-lo?
3SG-GEN mother.NOM which-girl-ACC scold-PST
'*Which $girl_1$ did her_1 mother scold?' (bound reading impossible)

b. *kon-meye-ke_1 **o-r_1** ma **t_1** bok-lo?
which-girl-ACC 3SG-GEN mother.NOM **t_1** scold-PST
'Which $girl_1$ did her_1 mother scold?'

A'-movement does not enable bound reading of the subject-internal pronoun.

(7) ***Reciprocal binding***

a. *ake-opor-er_1 ma-ra **kon du-to baccha-ke_1** bok-lo?
each other-GEN mother-PL.NOM **which two-CLF children-ACC** scold-PST
'*Which two $children_1$ did each other's mothers scold?'

b. ***kon du-to baccha-ke_1*** ake-opor-er_1 ma-ra **t_1** bok-lo?
which two-CLF children-ACC each other's mother-PL.NOM **t_1** scold-PST
'Which two children did each other's mother's t_1 scold?'

A'-movement of *kon duto baccha* 'which two children' over the reciprocal DP *ake-oper-er ma-ra* 'each other's mothers' does not provide an antecedent for binding.

However, A'-movement is known to be able to reconstruct. Reconstruction refers to the process where a movement operation is effectively reversed, restoring the structure to its pre-movement configuration for interpretation. This allows the binding principles to be applied as though the movement had never occurred (Barss 2001). In the example of

reconstruction provided in (8), the grammaticality of (8-b), despite an apparent violation of Condition A, demonstrates proper anaphor binding in its pre-movement structure in (8-a).

(8) a. Apu$_1$ **o-r$_1$** **kon** **chhobi** dekh-lo?
Apu.NOM **3SG-GEN** **which picture** see-PST
'Which picture of Apu$_i$ did he$_i$ see?'
b. **o-r$_1$** **kon** **chhobi** Apu$_1$ **t$_1$** dekh-lo?
3SG-GEN **which picture** Apu.NOM **t$_1$** see-PST
'Which picture of Apu$_i$ did he$_i$ see?'

2 Types of Scrambling

There are four distinct sub-classes of leftward scrambling. These are: 1) vP-internal movement; 2) clause-internal movement; 3) long-distance cross-clausal movement out of non-finite clauses; and 4) long-distance cross-clausal movement out of finite clauses.

2.1 vP-Internal Scrambling

vP-internal scrambling refers to the "permutation of the IODO order" inside the vP's domain (Sato & Goto 2014), as shown below:

(9) a. Apu [$_{vP}$ Keya-ke ***boi-ta*** di-lo] - [S IO DO V]
Apu.NOM Keya-DAT **book-CLF** give-PST
'Apu gave Keya the book.'
b. Apu [$_{vP}$ **boi-ta** Keya-ke **t$_1$** di-lo] - [S DO IO V]
Apu.NOM **book-CLF** Keya-DAT **t$_1$** give-PST
'Apu gave Keya the book.'

vP-internal scrambling in Bangla exhibits A-properties. This is illustrated using weak crossover obviation in (10). In (10-a), the pronoun *or boi* 'his book', is bound by Apu, indicating that the book belongs to Apu. Movement in (10-b) allows *protek meye* 'every girl' to bind the pronoun *or boi* 'their book,' providing a bound reading of the sort 'Apu gave every girl her book.'

(10) ***Weak crossover obviation***
a. Apu$_1$ [$_{vP}$ o-r$_{1/*2}$ boi-ta **prot-ek$_2$** **meye-ke** di-lo]
Apu.NOM 3SG-GEN book-CLF **every** **girl-ACC** give-PST
'Apu gave every girl his book.' (bound reading impossible)
b. Apu$_1$ [$_{vP}$ **prot-ek$_2$** **meye-ke** o-r$_{1/2}$ boi-ta **t$_1$** di-lo]
Apu.NOM **every** **girl-ACC** 3SG-GEN book-CLF **t$_1$** give-PST
'Apu gave every girl x, x's book.'

Converging evidence of A-movement can be found in reciprocal binding. It is shown in (11) that vP-internal scrambling provides a c-commanding antecedent to the unbound reciprocal pronoun.

(11) ***Reciprocal binding***

a. *Joy [$_{vP}$ ake-opor-er ma-baba-r-shathe **Rani-ar-Abhi-ke**
Joy.NOM each-other-GEN parent-PL-GEN-with **Rani-and-Abhi-ACC**
alap-kora-lo]
introduce-PST
'Joy introduced Rani and Abhi to each other's parents.'

b. Joy [$_{vP}$ **Rani-ar-Abhi-ke** ake-opor-er ma-baba-r-shathe **t**$_1$
Joy.NOM **Rani-and-Abhi-ACC** each-other-GEN parent-PL-GEN-with **t$_1$**
alap-kora-lo]
introduce-PST
'Joy introduced Rani and Abhi to each other's parents.'

(11-a) reflects the basic ditransitive word-order, where the reciprocal pronoun remains unbound, resulting in an ungrammatical construction because of a Condition A violation. On the other hand, in the derived structure (11-b), where the DO *Rani-ar-Abhi-ke* 'Rani and Abhi' undergoes vP-internal scrambling over the reciprocal pronoun *ake-opor-er* 'each other's', an antecendent is established for reciprocal binding. vP-internal scrambling can thus be A-movement in Bangla.

Sato & Goto (2014) similarly demonstrate that vP-internal scrambling in Japanese exhibits A-properties. Furthermore, they show that vP-internal scrambling in Japanese is unambiguously A-movement and cannot be A'-movement. An equivalent construction in Bangla demonstrates that this is also true in Bangla, as shown in (12).

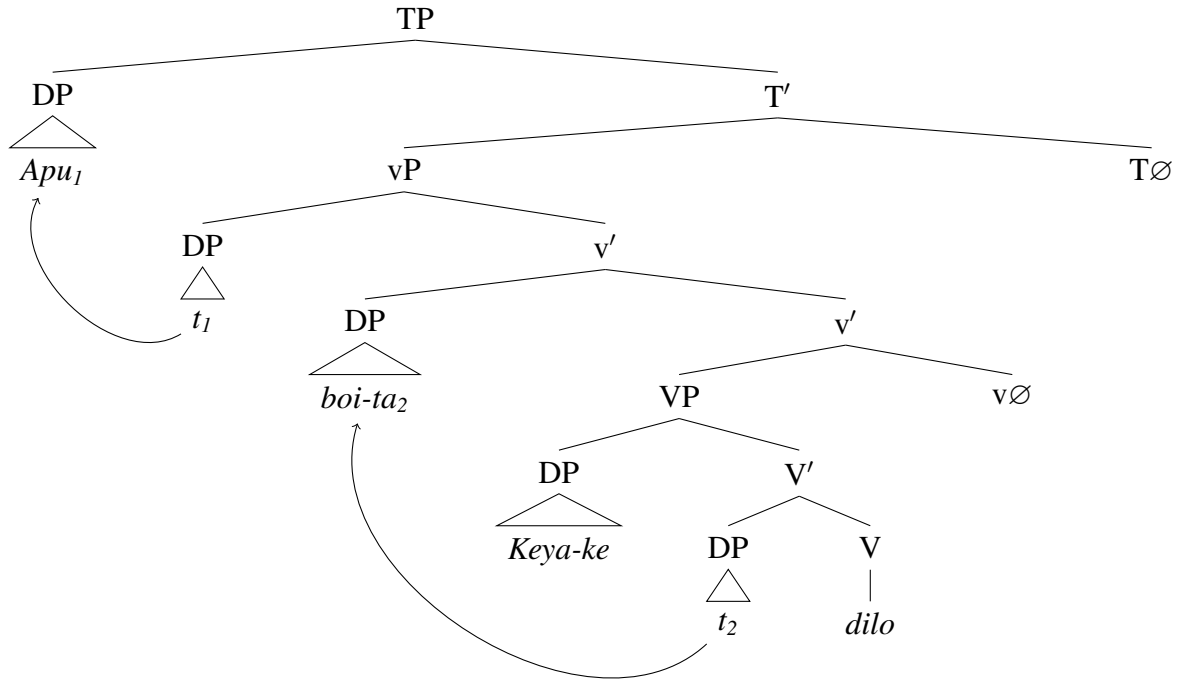
(12) a. Joy [$_{vP}$ Rani-ar-Abhi-ke **ake-opor-er-shathe** alap-kora-lo]
Joy.NOM Rani-and-Abhi-ACC **each-other-GEN-with** introduce-PST
'Joy introduced Rani and Abhi to each other.'

b. *Joy [$_{vP}$ **ake-opor-er-shathe** Rani-ar-Abhi-ke **t$_1$** alap-kora-lo]
Joy.NOM **each-other-GEN-with** Rani-and-Abhi-ACC **t$_1$** introduce-PST
'Joy introduced Rani and Abhi to each other.'

In this case, a grammatical reconstructed reading is unavailable. (12-a) provides the basic ditransitive word-order. The reciprocal pronoun, *ake-oper-er-shathe* 'with each other', is bound, making the sentence grammatical. However, movement of the reciprocal pronoun over *Rani and Abhi* in (12-b) is unacceptable. That is, such movement causes the reciprocal pronoun to A-bind the R-expression from the moved position, violating both Condition A (the reciprocal pronoun needs to be bound) and Condition C (the R-expression cannot be bound). This ungrammaticality is accurately predicted by A-movement, resulting in the exclusion of (12-b). However, if vP-internal scrambling were A'-movement, contrary to evidence in (12), the R-expression would be A-free, and Condition C violation would be evaded due to reconstruction. (12-b) shows that reconstruction by A'-movement is not available for vP-internal scrambling.

Therefore, this proves that vP-internal scrambling in Bangla is unambiguously A-movement. (13) provides the derivation of vP-internal A-movement in (9).

(13)



Apu boita Keya ke dilo 'Apu gave Keya the book.'

It is proposed that vP-internal scrambling targets an inner specifier of v, tucking in below the subject. This is necessary since the subject is seen as a more local goal by T_0 when its EPP probes.

2.2 Clause-Internal Scrambling

Clause-internal scrambling is the movement of an element across a subject to a sentence-initial position within the same clause (Sato & Goto 2014) as shown below:

(14) a. Apu **boi-ta** kin-lo
Apu.NOM **book-CLF** buy-PST
'Apu bought the book.'

b. **boi-ta** Apu **t_1** kin-lo
book-CLF Apu.NOM **t_1** buy-PST
'The book, Apu bought t_1.'

Clause-internal scrambling in Bangla exhibits both A- and A'-properties. Evidence of its A-properties comes from weak cross-over obviation, as shown in (15).

(15) ***Weak crossover obviation***

a. o-r$_1$ ma **prot-ek$_{*1/2}$** **baccha-ke** dekh-lo
3SG-GEN mother.NOM **every** **child-ACC** see-PST
'His/her mother saw every child.' (bound reading impossible)

b. **prot-ek$_1$** **baccha-ke** o-r$_1$ ma **t$_1$** dekh-lo
every **child-ACC** 3SG-GEN mother.NOM **t$_1$** see-PST
'For every child x, x's mother saw x.'

Movement of the object *protek baccha ke* 'every child' over the subject *or ma* 'his/her mother' provides a bound reading of the subject-internal pronoun. Furthermore, reciprocal binding, as in (16), also provides supporting evidence of A-movement in clause-internal scrambling environments; movement provides antecedent for reciprocal binding.

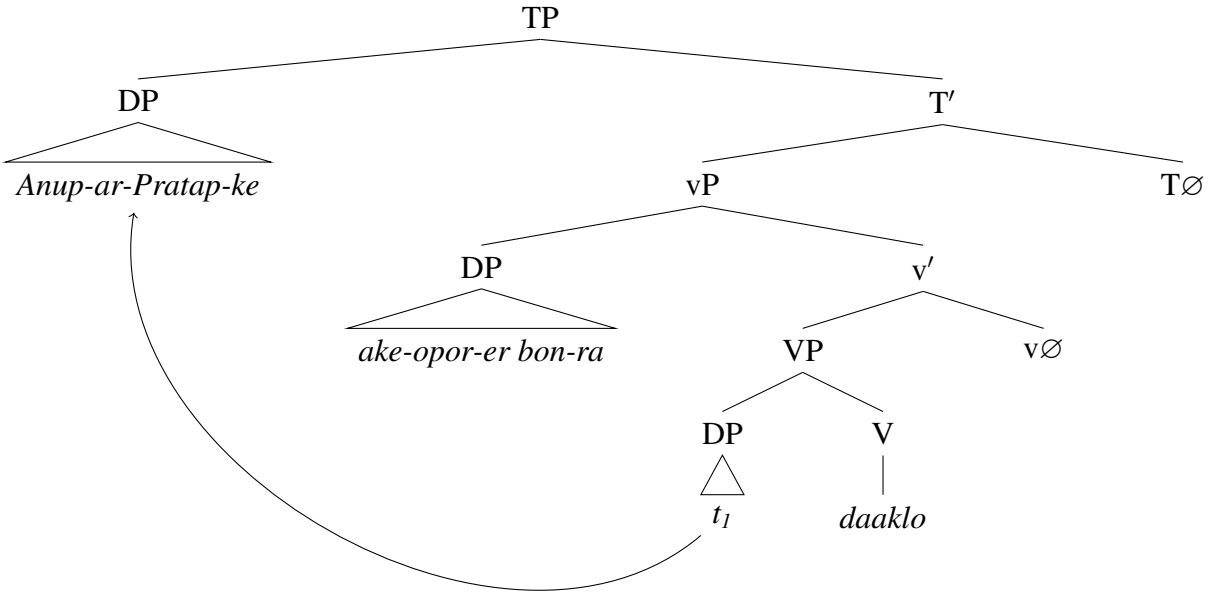
(16) ***Reciprocal binding***

a. **ake-oper-er$_1$ bon-ra* ***Anup-ar-Pratap-ke$_1$*** *daak-lo*
Each other's sister-PL **Anup and Pratap-ACC** call-PST
'*Each other's sisters called Anup and Pratap.'

b. ***Anup-ar-Pratap-ke$_1$*** *[ake-oper-er$_1$ bon-ra]* ***t$_1$*** *daak-lo*
Anup and Pratap-ACC Each other's sister- PL **t$_1$** call-PST
'Anup and Pratap, each other's sisters called t$_1$.'

A derivation of A-movement in clause-internal scrambling in (16) is given in (17).

(17)



Anup-ar-Pratap-ke ake-opor-er bon-ra daaklo 'Anup and Pratap, each other's sisters called t$_1$.'

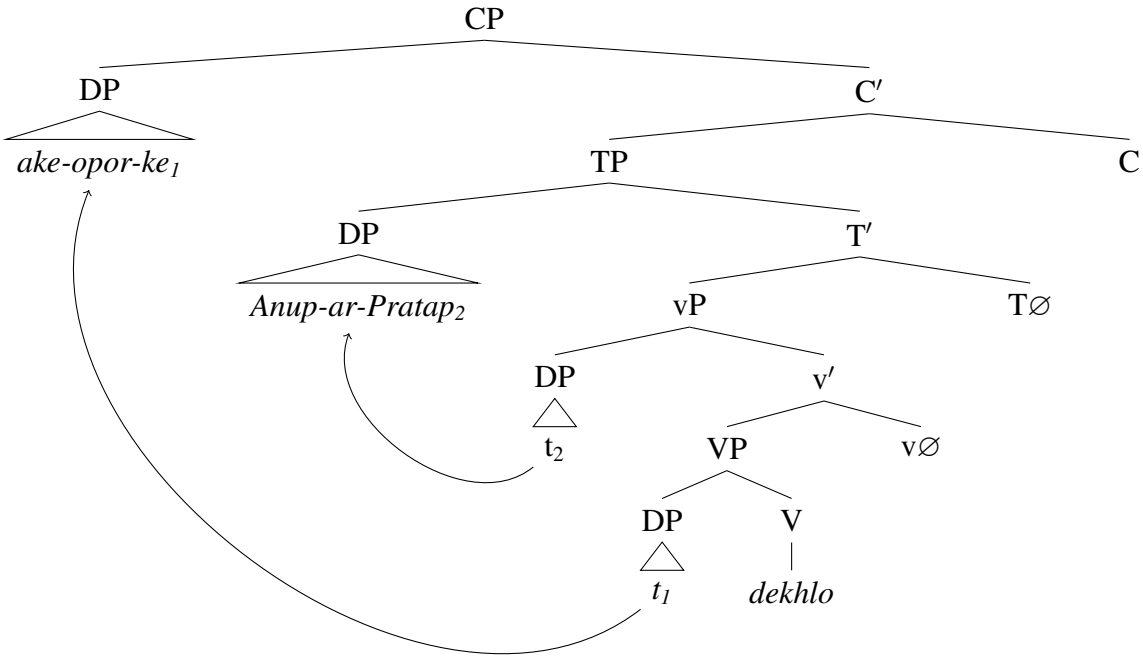
Hindi (Keine 2018) and Japanese (Sato & Goto 2014) also behave similarly in displaying A-movement in clause-internal scrambling. Furthermore, Hindi and Japanese, in their ability to reconstruct, also exhibit A'-properties in clause-internal scrambling (Keine 2018; Sato & Goto 2014). Equivalent phrases in Bangla reveal that clause-internal scrambling also exhibits A'-properties in Bangla, as demonstrated by reconstruction in (18).

(18) a. Anup-ar-Pratap **ake-opor-ke** dekh-lo
Anup and Pratap.NOM each-other-ACC see-PST
'Anup and Pratap saw each other.'

b. **ake-opor-ke** [Anup-ar-Pratap **t_1**] dekh-lo
Each-other-ACC Anup and Pratap.NOM **t_1** see-PST
'Each other, Anup and Pratap saw t_1.'

(18-a) shows the basic grammatical word order that follows both Conditions A and C in that the reciprocal pronoun is bound and, the R-expression is free. The grammaticality of (18-b) is evidence of reconstruction because the scrambled reciprocal pronoun does not induce violation of Condition C. The R-expression *Anup and Pratap* remains A-free, thereby avoiding violation of Condition C. Therefore, clause-internal scrambling can also be A'-movement.
The derivation of A'-movement in (18-b) is illustrated in (19).

(19)



ake-opor-ke Anup-ar-Pratap marlo 'Each other, Anup and Pratap saw t_1

2.3 Cross-Clausal Scrambling

Cross-clausal scrambling is the movement of an element to a sentence-initial position across a clause boundary (Sato & Goto 2014). Cross-clausal movement can occur out of both non-finite clauses (20) and finite clauses (21) (Keine 2018).

(20) ***Cross-clausal movement out of non-finite clauses***

a. Apu **Keya-ke** dekh-te chai-lo
Apu.NOM **Keya-ACC** see-INF want-PST
'Apu wanted to see Keya.'

b. **Keya-ke** Apu [$_{TP}$ **t$_1$** dekh-te] chai-lo
Keya-ACC Apu.NOM **t$_1$** see-INF want-PST
'Keya, Apu wanted to see t_1.'

(21) ***Cross-clausal movement out of finite clauses***

a. Apu bhab-lo [$_{CP}$ je Keya **shobai-ke** dekh-e-che]
Apu.NOM think-PST that Keya **everyone-ACC** see-PRF-PRS
'Apu thought that Keya had seen everyone.'

b. **shobai-ke** Apu bhab-lo [$_{CP}$ je Keya **t$_1$** dekh-e-che]
everyone-ACC Apu.NOM think-PST that Keya **t$_1$** see-PRF-PRS
'Everyone, Apu thought that Keya had seen t_1.'

The two scrambling environments vary in the types of movement they allow out of them. While movement out of non-finite clauses resembles clause-internal scrambling, allowing both A- and A'-movement, movement out of finite clauses seems to be restricted to A'-movement.

2.3.1 Cross-clausal scrambling out of non-finite clauses

As stated above, cross-clausal scrambling out of non-finite clauses exhibits both A- and A'-properties. Evidence of A-movement can be found in weak crossover obviation (22) and binding of reciprocal pronoun (23).

(22) ***Weak crossover obviation***

a. [o-r$_{1/*2}$ ma] [$_{TP}$ **prot-ek$_2$** **baccha-ke** dekh-te] chai-lo
3SG-GEN mother.NOM every child-ACC see-INF want-PST
'His/her mother wanted to see every child.' (bound reading impossible)

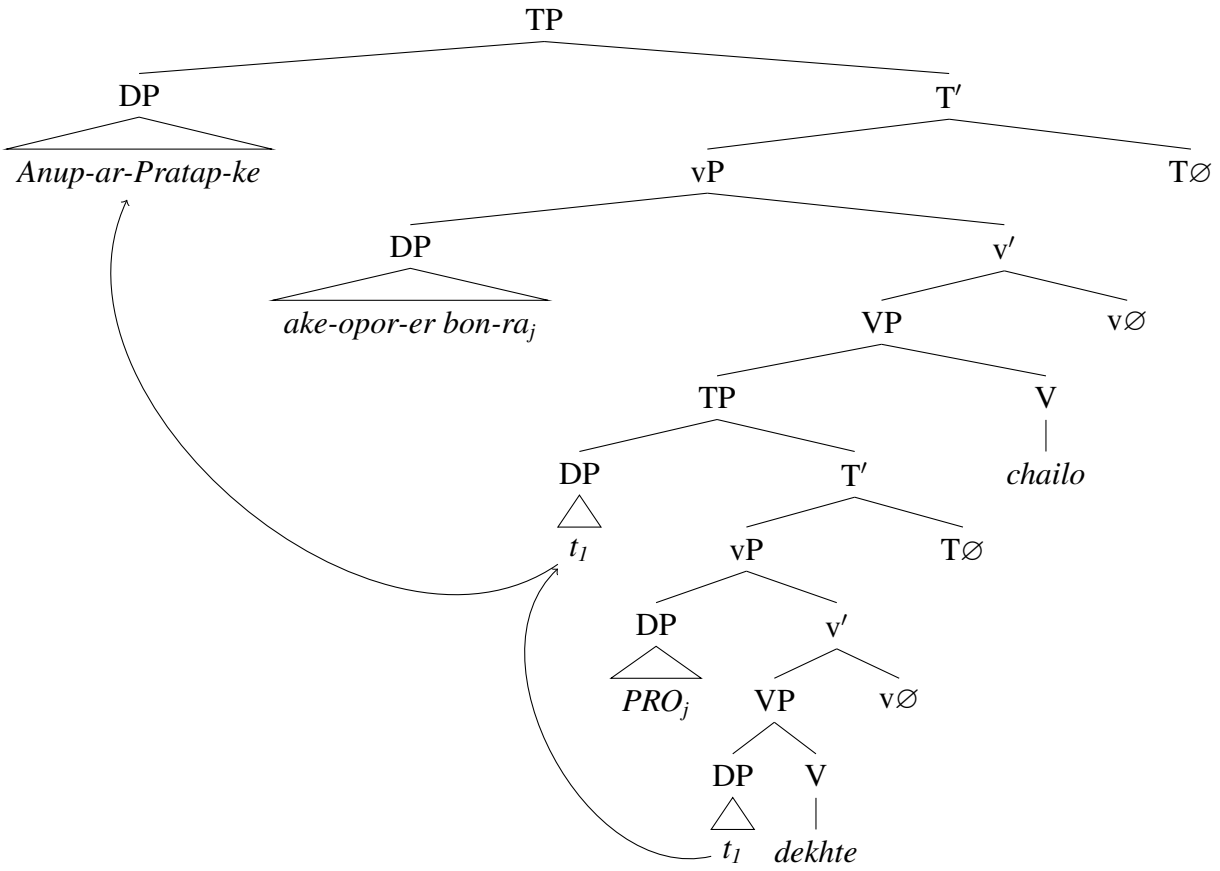
b. **prot-ek$_1$** **baccha-ke** **[o-r$_1$** ma] [$_{TP}$ **t$_1$** dekh-te] chai-lo
every child-ACC 3SG-GEN mother.NOM **t$_1$** see-INF want-PST
'For every child x, x's mother wanted to see x.'

(23) ***Reciprocal binding***

a. [*ake-oper-er$_1$ bon-ra] [$_{TP}$ **Anup-ar-Pratap-ke$_1$** dekh-te] chai-lo
Each other's sister-PL **Anup-and-Pratap-ACC** see-INF want-PST
'*Each other's sisters wanted to see Anup and Pratap.'

b. **Anup-ar-Pratap-ke$_1$** [ake-oper-er$_1$ bon-ra] [$_{TP}$ **t$_1$** dekh-te] chai-lo
Anup-and-Pratap-ACC Each other's sister-PL **t$_1$** see-INF want-PST
'Anup and Pratap, each other's sisters wanted to see t_1.'

The derivation of reciprocal binding as in (23) is given in (24).



(24)

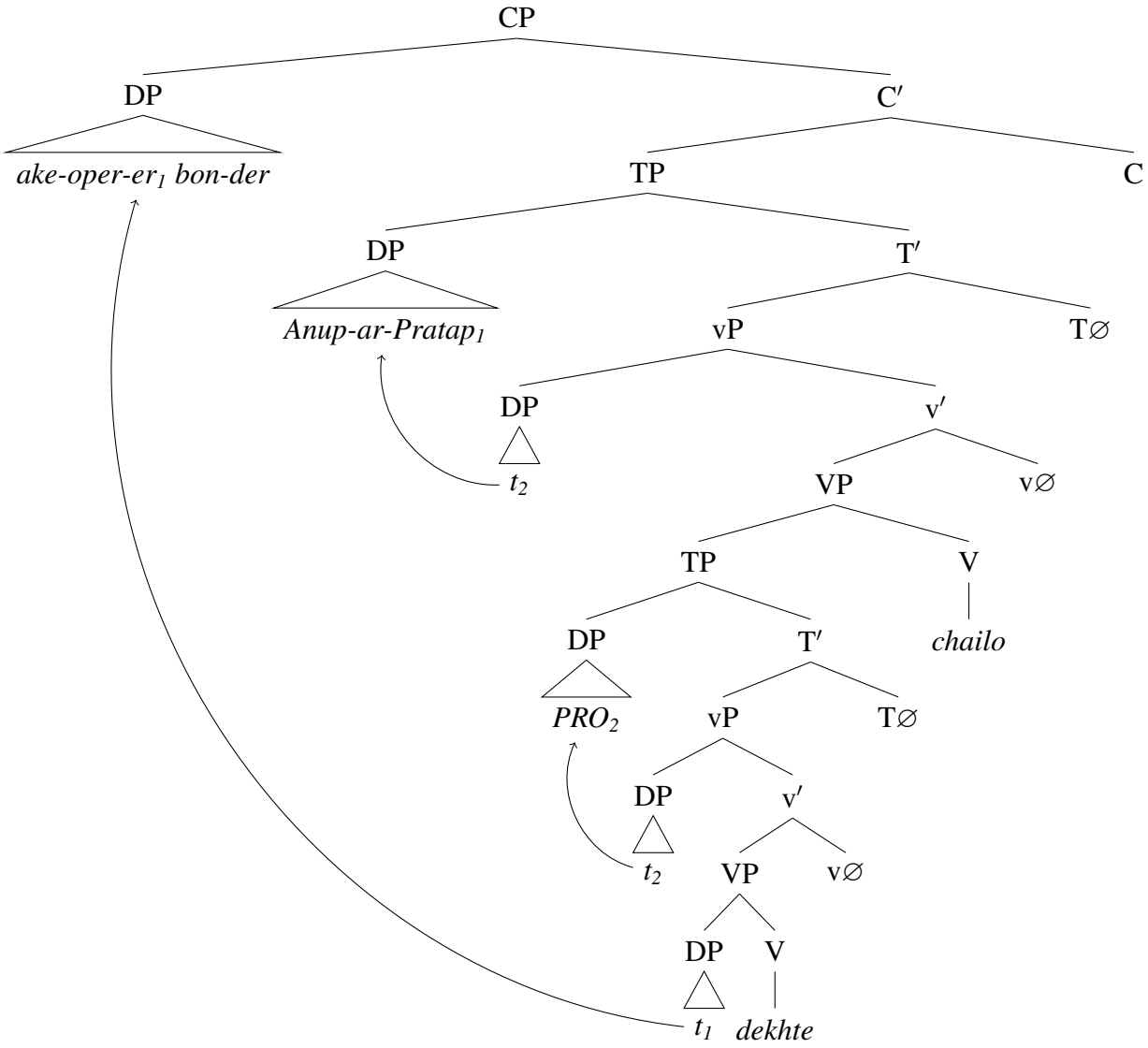
Anup-ar-Pratap ke ake-opor-er bon-ra dekhte chailo
'Anup and Pratap, each other's sisters wanted to see t_1.

Movement out of non-finite clauses can also be A'-movement, as shown in (25), and derived in (26).

(25) a. **Anup-ar-Pratap$_1$** [$_{TP}$ **ake-oper-er$_1$** bon-der dekh-te] chai-lo
Anup and Pratap.NOM each other's sister-PL see-INF want-PST
'Anup and Pratap wanted to see each other's sisters.'
(*Reciprocal pronoun is bound by Anup and Pratap.*)

b. **[ake-oper-er$_1$ bon-der] Anup-ar-Pratap$_1$** [$_{TP}$ t$_1$ dekh-te] chai-lo
each other's sister-PL Anup and Pratap-ACC t$_1$ see-INF] want-PST
'Each other's sisters, Anup and Pratap wanted to see.'

(26)



Ake-opor-er bon-der Anup-ar-Pratap dekhte chailo
'Each other's sisters, Anup and Pratap wanted to see.'

(25-a) presents the basic word-order, which follows both Conditions A and C of binding. (25-b) shows a grammatical sentence with scrambled word order that violates both binding conditions; the R-expression is bound, and the reciprocal pronoun is not. The grammaticality of (25-b) is evidence of reconstruction, and thereby of A'-movement.

2.3.2 Cross-clausal scrambling out of finite clauses

In Bangla, cross-clausal scrambling out of finite clauses does not display A-properties. While movement out of a finite sentence is possible, it does not lead to binding of the subject-internal pronoun *or ma* 'his/her mother' by the object *prot-ek baccha ke* 'every child', as shown in (27).

(27) ***Weak crossover obviation***

a. [o-$r_{1/*2}$ ma] bhab-lo [$_{CP}$ je Anup **prot-ek$_2$ baccha-ke**
3SG-GEN mother.NOM think-PST that Anup.NOM every child-ACC
dekh-e-che]
see-PRF-PRS
'His/her mother thought that Anup had seen every child.'

b. **prot-ek$_2$ baccha-ke** [o-$r_{1/*2}$ ma] bhab-lo [$_{CP}$ je Anup **t_1**
every child-ACC 3SG-GEN mother.NOM think-PST that Anup.NOM **t_1**
dekh-e-che]
see-PRF-PRS
'His/her mother thought that Anup had seen every child.'

A bound reading is not obtained despite movement. Since this movement does not obviate weak crossover, it is thereby classified as an A'-movement. Reciprocal binding also provides supporting evidence. In (28), movement of *Anup-ar-Pratap* 'Anup and Pratap-ACC' over the reciprocal pronoun *ake opor er* 'each other's' does not lead to reciprocal binding. Hence, scrambling out of finite clauses is unambiguously A'-movement.

(28) ***Reciprocal binding***

a. *ake-oper-er_1 bon-ra bhab-lo [$_{CP}$ je Keya
each other's sister-PL think-PST that Keya.NOM
Anup-ar-Pratap-ke dekh-e-che]
Anup-and-Pratap-ACC see-PRF-PRS
'*Each other's sisters thought Keya had seen Anup and Pratap.'

b. ***Anup-ar-Pratap-ke$_1$** ake-oper-er_1 bon-ra bhab-lo [$_{CP}$ je Keya
Anup-and-Pratap-ACC each other's sister-PL think-PST that Keya.NOM
t_1 dekh-e-che]
t_1 see-PRF-PRS
'Anup and Pratap, each other's sisters thought that Keya had seen t_1.'

In sum, Bangla exhibits the following properties in different scrambling environments:

(29) vP-internal scrambling is unambiguously A-movement.
Clause-internal scrambling can be A- or A'-movement.
Cross-clausal movement out of non-finite clauses can be A- or A'-movement.
Cross-clausal movement out of finite clauses in unambiguously A'-movement.

The varying properties of movement in the different scrambling environments can be ex-

plained based on the structure of clauses and the positions targeted by A- and A'-movement.

3 A Position-Based Account of Bangla Scrambling

The positional properties of A- and A'-movement in Bangla mirror the properties of movement in Hindi, as shown in Keine (2018). Equivalent constructions in Bangla are used to determine the structure of clauses and the positions involved in A- and A'-movement.

3.1 The Structure of Embedded Clauses

Keine (2018) has demonstrated that in Hindi, finite clauses are CPs, whereas non-finite clauses, which lack a CP layer, are TPs. This difference in structure is determined based on two observations: Firstly, Hindi finite embedded clauses may contain the complementizer *ki*, but non-finite clauses may not. Secondly, interrogative scope is associated with finite clauses and not non-finite clauses, which means that non-finite clauses lack an embedded-question reading. The standard assumption that interrogative scope is associated with C explains why it is absent in non-finite clauses, which lack a CP layer. Furthermore, complementizers are also known to sit in C, and the lack of a CP layer explains why they are absent in non-finite clauses. Therefore, non-finite clauses are structurally smaller than finite clauses (Keine 2018) and are classified as TPs.

Similarly, Bangla finite clauses also may contain the complementizer *je* (30), but non-finite clauses may not (31).

(30) Apu bhab-lo [$_{CP}$ **je** Keya shobai-ke dekh-e-che]
Apu.NOM think-PST that Keya-ACC everyone see-PRF-PRS
'Apu thought that Keya had seen everyone.'

(31) Apu [$_{TP}$ ***je** Keya-ke dekh-te] chai-lo
Apu.NOM *that Keya-ACC see-INF want-PST
'Apu wants to see Keya.'[3]

Again, in Bangla, only finite clauses provide an interrogative scope position, but non-finite clauses do not. The wh-element *ki* 'what' takes wh-scope within the embedded finite sentence, like in Hindi (Keine 2018); a matrix-question interpretation is impossible because finite-clauses are islands for wh-scope. In non-finite clauses, however, an embedded-question interpretation is impossible, and the wh-element in (33) takes mandatory matrix scope.

(32) tumi jaano [$_{CP}$ **je** o ki kor-e-che]
you know that 3SG.NOM what do-PRF-PRS
'You know what he did.'

[3] This sentence might have a relative clause reading, as in "Apu, who wanted to see Keya"; or something like "Oh, but Apu wanted to see Keya!".

(33) tumi [$_{TP}$ **ki** kor-te] jaano?
you what do-INF know
'What do you know to do?'

The evidence therefore leads to the same conclusion for Bangla (33).

(34) a. Finite clauses in Bangla are CPs.
b. Non-finite clauses in Bangla lack a CP layer; they are TPs.

3.2 Positions Targeted by A- and A'-Movement

Once again, evidence from Hindi (Keine 2018) demonstrates that A-movement lands in Spec,TP (and TP-internal positions), whereas A'-movement lands in Spec,CP. Similar evidence confirms that this distinction also applies to Bangla.

3.2.1 A-movement lands in Spec,TP (and TP-internal positions)

Keine (2018) presents novel evidence that Spec,TP, and TP-internal positions serve as landing sites of the A-movement in Hindi. To illustrate the same in Bangla, an embedded non-finite clause is extraposed to the right to demarcate the right edge in (35). This extraposition ensures that movement remains contained within the non-finite clause rather than resulting in extraction out of it.

(35) Keya cheye chilo [$_{TP}$ prot-ek meye-ke$_1$ [o-r$_1$ biye-r shomoy **t$_1$**
Keya.NOM want AUX every girl-ACC 3SG-GEN wedding-GEN time **t$_1$**
dekh-te]
see-INF
'Keya wanted to see every girl x during x's wedding.'

The embedded DO *protek meye* 'every girl' moves over the adjunct *or biyer shomoy* 'during her wedding' and can bind the internal pronoun *or* 'her' from its landing site. This is clear evidence of A-movement.

Since extraposition prevents movement outside the non-finite clause, the landing site of *protek meye* 'every girl' must be within the non-finite clause. Consequently, (35) demonstrates that A-movement can target a position internal to a non-finite clause. Furthermore, based on evidence that non-finite clauses are TPs that lack a CP layer, A-movement in Bangla must also land in Spec,TP and TP-internal positions.

3.2.2 A'-movement lands in Spec, CP

In contrast to A-movement, A'-movement targets TP-external positions in Hindi (Keine 2018). The same can be demonstrated for Bangla as well. (36) consists of sentences in a double embedding structure where a finite clause is embedded within a non-finite clause, which in turn is embedded within a finite matrix clause.

(36) ***A'-movement cannot land inside a non-finite clause***

a. [$_{CP}$ ami chai [$_{TP}$ bol-te [$_{CP}$ je ami **boi-ta** pod-e niy-e-chi]
1SG.NOM want say-INF that 1SG book-CLF read take-PRF-PRS
'I want to say that I have read the book.'

b. [$_{CP}$ *ami chai [$_{TP}$ **boi-ta** bol-te [$_{CP}$ je ami **t$_1$** pod-e niy-e-chi]
1SG.NOM want **book-CLF** say-INF that 1SG **t$_1$** read take-PRF-PRS
'*I want to **the book** say that I have read t_1.'

c. [$_{CP}$ **boi-ta** ami chai [$_{TP}$ bol-te [$_{CP}$ je ami **t$_1$** pod-e niy-e-chi]
book-CLF 1SG.NOM want say-INF that 1SG **t$_1$** read take-PRF-PRS
'**The book** I want to say that I have read t_1.'

Both (36-b) and (36-c) depict movement out of finite clauses, and hence, must be A'-movement (given that finite clauses allow only A'-movement out of them, as demonstrated in section 2.3.3) Converging with evidence in Hindi (Keine 2018), the ungrammaticality of (36-b) demonstrates that A'-movement in Bangla cannot land inside a non-finite clause. On the other hand, (36-c) shows that A'-movement can land in finite clauses.

Therefore, the ungrammaticality of (36-b) must stem from the difference in the structural properties of finite and non-finite clauses. Non-finite clauses, which obligatorily lack a CP layer, simply lack the "functional structure" needed for A'-movement landing site. In contrast, finite clauses, with their CP layer, offer this landing site for A'-movement. This, therefore, must indicate that A'-movement targets TP-external, Spec,CP positions.

In sum, A- and A'-movement target the following positions in Bangla:

(37) a. A-movement lands in Spec,TP (or TP-internal) positions
b. A'-movement lands in Spec,CP.

4 Discussion

The conclusions in (37) predict the different properties of A- and A'-movement in the different scrambling environments. Reiterating the key observations presented in Section 2: vP-internal scrambling is unambiguously A-movement, whereas clause-internal movement may be both A- and A'-movement. Further, cross-clausal movement out of non-finite clauses again exhibits properties of both A- and A'-movement, but cross-clausal movement out of finite clauses can only be A'-movement.

vP-internal scrambling can only be A-movement because the VP-internal structure does not have the functional structure necessary for providing a landing site for A'-movement. Clause-internal scrambling, on the other hand, can be both A- and A'-movement because the structure of the clause provides landing sites for both kinds of movement. Specifically, A-movement can target Spec,TP, enabling it to establish binding relations, while A'-movement can occupy a higher Spec,CP position, facilitating reconstruction in the clause.

Furthermore, in cross-clausal environments, movement out of non-finite embedded clauses exhibits properties of both A- and A'- movement. This also follows from the

fact that the structure of the non-finite clause can provide landing sites for both types of movement. A-movement out of the embedded non-finite clauses can land in the Spec,TP position of the higher clause. Again, non-finite clauses are transparent to A'-movement because movement out of a non-finite clause can land in the Spec,CP position of the higher clause, hence leading to reconstruction.

Movement out of a finite (i.e. CP) clause is A'-movement; it can only target an A'-position. That is, movement out of an embedded finite clause must obligatorily proceed through Spec,CP of the embedded clause and therefore can only land in the Spec,CP position of the higher matrix clause but not a lower TP-internal position. This is described as a *Ban on Improper Movement*.

(38) *Ban on Improper Movement*
Movement out of Spec,CP must land in Spec,CP. Movement from Spec,CP to a TP-internal position is ruled out. (from Keine 2018:22)

Converging with the evidence in Hindi (Keine 2018), finite clauses in Bangla allow A'-movement out of them because such movement lands in Spec,CP of the higher clause. The lack of a CP layer in embedded non-finite clauses allows A-movement out of them.

The ban on A-movement out of finite clauses can also be explained in terms of phase-boundaries. A'-positions (Spec,CP) are generally known to be phase-edge positions, while A-positions (Spec,TP and TP-internal) are phase-internal positions. A-movement does not cross phase boundaries, and therefore, "movement may not proceed from a phase edge to a phase-internal position" (Keine 2018).

In conclusion, this study distinguishes the different types of movement involved in Bangla scrambling, and provides an account of the properties exhibited by A- and A'-movement in four scrambling environments using a position-based account.

Bangla-scrambling has also been known to exhibit right-ward movement (David 2015; Bhatt & Dayal 2007). This can be seen in the following example (39):

(39) a. **t_1** Joy-ke boi-ta di-lo **Rani**
t_1 Joy-ACC book-CLF give-PST Rani.NOM
'To Joy gave book, Rani.'
b. am-ar **t_1** ach-e **ek-ti** **darun dharona**
1SG-GEN t_1 be-PRS one-CLF.DIM great idea
'I have a great idea.'

The properties of right-ward scrambling in Bangla form the next crucial step in this research. Additionally, Bangla scrambling is also widely noted in wh-constructions. wh-elements can remain in-situ (40-a), undergo intermediate movement (40-b) (40-c), and right-ward movement (40-d), as shown below in (40).

(40) a. **ke** dilo Rani-ke boi-ta? - Who gave Rani the book?
b. Rani-ke **ke** dilo boi-ta? - Rani who gave the book?
c. boi-ta **ke** dilo Rani-ke? - The book gave Rani who?
d. dilo Rani-ke boi-ta **ke**? - Gave Rani the book who?

A comprehensive account of A'-movement in question-constructions warrants further examination.

Furthermore, certain speakers of Bangla agree to a bound reading in constructions involving movement out of finite clauses (27) as shown below:

(41) ***Weak crossover obviation***

a. [o-$r_{1/*2}$ ma] bhab-lo [$_{CP}$ je Anup **prot-ek$_2$ baccha-ke**
3SG-GEN mother.NOM think-PST that Anup.NOM every child-ACC
dekh-e-che]
see-PRF-PRS
'His/her mother thought that Anup had seen every child.'

b. **prot-ek$_2$ baccha-ke** [o-r_2 ma] bhab-lo [$_{CP}$ je Anup **t$_1$**
every child-ACC 3PL-GEN mother.NOM think-PST that Anup.NOM **t$_1$**
dekh-e-che]
see-PRF-PRS
'Every child x's mother thought that Anup had seen x.'

Evidence in (41-b) demonstrates that movement out of finite clauses in Bangla can feed binding, providing support for A-movement. This contrasts with the ungrammaticality observed in (27), where such movement is disallowed. This indicates that Bangla can allow hyperraising out of finite clauses, contrasting with the evidence in Hindi (Keine 2018). Notably, this suggests that Bangla permits hyperraising out of finite clauses, differing from Hindi, as reported by Keine (2018). Interestingly, this variation appears to be influenced by speakers' exposure to Hindi. Speakers of Bangla from Northern Indian states, where Hindi has a greater influence, tend to disallow such constructions, while those from West Bengal accept bound readings. This phenomenon offers an intriguing avenue for exploring how Bangla's clause structure may diverge from Hindi, despite the two languages often being grouped together. The findings raise compelling questions about syntactic locality and the CP phase hypothesis, with potential implications for understanding cross-linguistic variation in clause structure. The underlying causes of this variation and its broader implications for Bangla's syntax merit further investigation.

References

Barss, Andrew. 2001. Syntactic reconstruction effects. *The handbook of contemporary syntactic theory* 670–696.

Bhatt, Rajesh & Veneeta Dayal. 2007. Rightward scrambling as rightward remnant movement. *Linguistic Inquiry* 38(2). 287–301.

Bhattacharya, Tanmoy. 2002. Peripheral and clause-internal complementizers in Bangla: A case for remnant movement. In *Proceedings of the western conference on linguistics 2000*, 100–112. Department of Linguistics, California State University, Fresno Fresno.

Carnie, Andrew. 2021. *Syntax: A generative introduction*. John Wiley & Sons.

Cho, Jai-Hyoung. 1994. On scrambling: reconstruction, crossover, and anaphor binding. *Theoretical issues in Korean linguistics,* 255–274.

Dash, Niladri Sekhar. 2015. *A descriptive study of bengali words*. Cambridge University Press.

David, Anne Boyle. 2015. *Descriptive grammar of Bangla*, vol. 2. Walter de Gruyter GmbH & Co KG.

Dayal, Veneeta. 1994. Binding facts in Hindi and the scrambling phenomenon. *Theoretical perspectives on word order in South Asian languages* 237–262.

Fong, Suzana. 2019. Proper movement through spec-cp: An argument from hyperraising in Mongolian. *Glossa: a journal of general linguistics* 4(1).

Guha, Anamita. 2013. An optimality-theoretic approach to Bangla information structure. In *Paper proceedings of international conference on language, literature & linguistics 2013 (online)*, 179.

Islam, J. 2016. The necessity of covert wh-movement in sov languages: Re-thinking the overt movement proposal for Bangla.

Keine, Stefan. 2018. Case vs. positions in the locality of a-movement. *Glossa: a journal of general linguistics* 3(1).

Lewis, M. Paul (ed.). 2009. *Ethnologue: Languages of the world*. Dallas, TX, USA: SIL International sixteenth edn.

Mahajan, Anoop. 1994. Toward a unified theory of scrambling. *Studies on scrambling: Movement and non-movement approaches to free word-order phenomena* 301–330.

Mahajan, Anoop Kumar. 1990. *The A/A-bar distinction and movement theory*: Massachusetts Institute of Technology dissertation.

Ross, John Robert. 1967. Constraints on variables in syntax. .

Saito, Mamoru. 1985. *Some asymmetries in Japanese and their theoretical implications*: NA Cambridge dissertation.

Saito, Mamoru. 1992. Long distance scrambling in Japanese. *Journal of East Asian Linguistics* 1. 69–118.

Sato, Yosuke & Nobu Goto. 2014. Scrambling. In *The routledge handbook of syntax*, 264–282. Routledge.

Simpson, Andrew & Tanmoy Bhattacharya. 2003. Obligatory overt wh-movement in a wh-in-situ language. *Linguistic Inquiry* 34(1). 127–142.

Simpson, Andrew & Saurov Syed. 2014. Finiteness, negation and the directionality of headedness in Bangla. *Natural Language & Linguistic Theory* 32. 231–261.

Syed, Saurov. 2017. *The structure of noun phrases in Bengali: What it tells us about phases and the universality of DPs*: University of Southern California dissertation.

Thompson, Hanne-Ruth. 2004. *Toward a definitve grammar of Bengali: A practical study and critique of research on selected grammatical structures*. University of London, School of Oriental and African Studies (United Kingdom).

Thompson, Hanne-Ruth. 2020. *Bengali: A comprehensive grammar*. Routledge.