

# Movement within and without a clause\*

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## 1 Introduction

- This talk will focus on the derivation and interpretation of so-called ‘Comp-internal clauses’ in Bengali (Bhattacharya, 2001).
- CPs headed by the head-initial complementizer *je* normally obligatorily appear post-verbally (1). However, when an **element** (henceforth called the **PJE**, or **pre-*je*-element**) appears in first position within a *je* clause, the clause must appear pre-verbally (2).

### (1) *Bengali post-verbal clauses*

- a. ami bollam [je Aparṇa deri korlo]  
I said C Aparna late did  
I said that Aparna was late.

- b. \*ami [je Aparṇa deri korlo] bollam

### (2) *Bengali Comp-internal clauses*

- a. ami [Aparṇa<sub>PJE</sub> je t<sub>PJE</sub> deri korlo] bollam  
I Aparna C late did said  
I said that Aparna was late.

- b. \*ami bollam [Aparṇa<sub>PJE</sub> je t<sub>PJE</sub> deri korlo]

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- I will present previously unnoticed facts about the scope and binding behavior of the PJE which, along with certain assumptions about the interpretation of pied-piping at LF, supports Bayer & Dasgupta (2016)’s claim that the word order asymmetry facts in (1-2) derive from clausal pied-piping:

**Claim:** Bengali Comp-internal clauses involve **clausal pied-piping** driven by **long scrambling of the PJE** into the matrix clause. That is, it is the PJE which is driving movement, pulling the rest of the clause along for the ride.

- Additionally, I will show that certain Comp-internal clauses involve **A-pied-piping** (that is, pied-piping driven by movement to an A-position), which, in addition to being novel in itself, gives us an example of long distance A-movement (*hyperraising*) in Bengali.
- Finally, I will argue that this pied-piping is **narrow syntactic movement** (that is, not PF movement) necessitated by **an interface condition on preservation of prosodic structure**, ultimately driven by enclitic properties of the complementizer *je*.

## 2 Relevant Bengali syntax

- Bengali sentences are normally verb-final, however *je* clauses obligatorily appear post-verbally. (Bayer, 2013)
- Matrix indirect objects are able to bind into a rightward *je* clause:

### (3) *Binding into a rightward embedded clause* (Bayer, 2013, p. 264)

ami prottek-ṭa chele-ke bole-chi [je ek-jon ta-ke durga  
I each-CL boy-ACC say-PRF C one-CL he-ACC Durga  
pujo-y notun jama kapoṛ debe]  
Puja-LOC new clothes give will

I told every boy<sub>i</sub> that someone will give him<sub>i</sub> new clothes at the Durga Puja.

- Based on this fact, I will be assuming in this talk that post-verbal *je* clauses are in their base generated position, and their rightward position arises as a result of a post-syntactic operation.
- Bengali, as is cross-linguistically common (Mahajan, 1990; Ko, 2018), has ‘VP-internal’ scrambling which exhibits properties of A-movement:

(4) **VP-internal scrambling** (Bhattacharya & Simpson, 2011)

- a. Hori [prottek sikkok]-ke [kono ek-ṭa chatr-er khata]  
 Hori each teacher-ACC some 1-Cl student-Gen copy  
 dekhalo.  
 showed  
 Hori showed every teacher some student’s copy. [ $\forall > \exists$ ,  
 $*\exists > \forall$ ]
- b. Hori [kono ek-ṭa chatr-er khata]<sub>i</sub> [prottek sikkok]-ke t<sub>i</sub>  
 Hori some 1-Cl student-Gen copy each teacher-ACC  
 dekhalo.  
 showed  
 Hori showed every teacher some student’s copy. [ $\forall > \exists$ ,  
 $\exists > \forall$ ]

- Here, in the base generated order we are only able to get surface scope, but if we scramble the direct object over the indirect object, we can either get surface scope, or indirect scope, which means this movement has created new binding possibilities.

### 3 Comp-internal clauses

- Previous accounts of Comp-internal clauses include Dasgupta 1980, who argues that clause-medial *je* is not in fact a complementizer but a focus marker, and Hsu (2016), who argues in a Match Theoretic setting that the pronunciation of *je* clause-internally is the result of pronouncing *je* on a head in the lower left periphery, motivated by its prosodic properties.

- Most relevant here is the account of Bayer & Dasgupta (2016), who argues based on the Bengali data and similar data from Bavarian German that Comp-internal clauses involve clausal pied-piping. However, their account crucially differs from mine in that they assume that all of the pied-piping is driven by information structural features, and that the PJE does not exit the clause.

- As noted by Datta (2018), movement to the PJE position of an embedded clause appears to obey syntactic locality restrictions:

(5) **Movement to PJE position obeys syntactic locality** (Datta, 2018)

- a. \* [Ram-er<sub>PJE</sub> je t<sub>PJE</sub> shathe Robi porto], Raja jane  
 Ram-GEN C with Ravi studied Raja knows  
 That Ravi was Ram’s classmate, Raja knows.
- b. \* [Ram-er poribar<sub>PJE</sub> je t<sub>PJE</sub> ar Anup-er bondhura  
 Ram-GEN family C and Anup-GEN friends  
 berate gache], ...  
 tour gone  
 That Ram’s family and Anup’s friends went for a tour, ...

- I assume due to the fact that the PJE appears to the left of the complementizer *je* that the PJE position is Spec,CP.
- While Bayer & Dasgupta claim that Comp-internal clauses require a particular information structure (specifically that the PJE is either focused or topicalized), Hsu (2016) notes that no special information structure is required as long as the PJE is the embedded subject. For example, indefinite and quantificational embedded subjects, which are normally not allowed to be topicalized or focused, are allowed to be PJEs:

(6) **No special information structure needed for embedded subject PJE** (Hsu, 2016)

- a. Jon [du-to chatro<sub>PJE</sub> je t<sub>PJE</sub> esheche] bollo  
 John two-CL student C come.PERF said  
 John said that two students came.

- b. Jon [kew<sub>PJE</sub> je t<sub>PJE</sub> ase-ni] bollo  
 John anyone C come-NEG said  
 John said that no one came.
- c. \* Jon [kau-ke<sub>PJE</sub> je dadubhai t<sub>PJE</sub> dekh-e-ni] bollo  
 John anyone-ACC C grandfather see-PERF-NEG said  
 John said that grandfather saw no one.

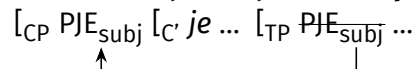
- This restriction is similar to the requirement for Spec,CP in Germanic V2 clauses (Frascarelli & Hinterhölzl, 2007).
- To account for this information-structural property, I propose that movement of a non-subject to embedded Spec,CP requires movement to a Topic head higher than the canonical subject position, which avoids a violation of Relativized Minimality:

(7) **Movement of a non-subject to PJE position**



- Otherwise, movement to Spec,CP is 'free' for the subject:

(8) **Movement of a subject to PJE position**



- The PJE seems to be inseparable from the rest of the clause – for instance, we cannot put a matrix element in between it and the rest of the clause:

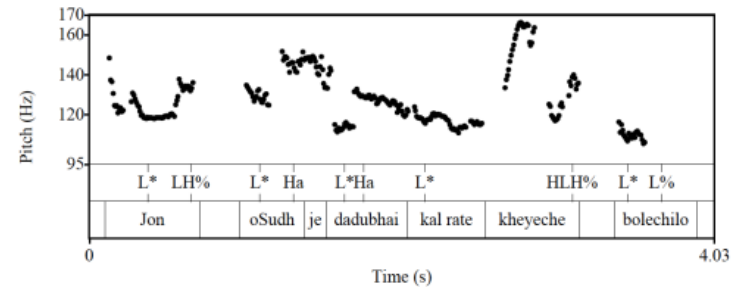
(9) **Inseparability of the PJE**

\* Aparṇa<sub>PJE</sub> ami [je t<sub>PJE</sub> deri korlo] bollam  
 Aparna I C late did said

*Attempted:* I said that Aparna was late.

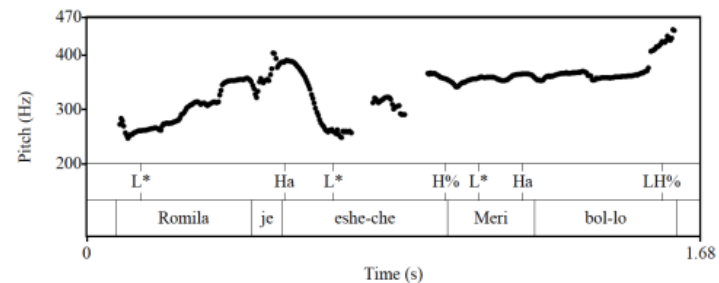
- Additionally, as noted by Hsu (2016), the PJE and the rest of the clause form a prosodic unit to the exclusion of the rest of the clause, with boundary tones appearing on both sides (Fig1).

- Hsu additionally notes that in Comp-internal clauses, *je* is an affixal enclitic on the PJE – we can see that *je* carries the pitch-peak for the prosodic constituent containing the PJE, which means that it's inside the same prosodic constituent as the PJE (Fig2).



“John said that grandfather took medicine last night.”

Figure 1: Boundary tones appear on both sides of Comp-internal clauses.



“Mary said that Romila came.”

Figure 2: *je* carries the pitch peak for the PJE's prosodic phrase.

- This prosodic relationship, between *je* and the PJE, will play an important role in explaining why we must do clausal pied-piping when we try to move the PJE to the matrix clause.

## 4 The pre-je-element

- In this section, I will bring to light previously unnoticed facts that suggest that contrary to the surface form, **the PJE occupies its own matrix specifier at LF**.
- With respect to Principles A and B, PJE's act as though they are in the matrix:

### (10) Principle A effects

- a. Aparṇa [nije<sub>PJE</sub> je t<sub>PJE</sub> deri korlo] bollo  
 Aparna self C late did said  
 Aparna<sub>i</sub> said that she<sub>i</sub> was late.
- b. \*Aparṇa bollo [je nije deri korlo]  
 Aparna said C self late did

### (11) Principle B effects

- a. ami Aparṇa-ke [o<sub>PJE</sub> je t<sub>PJE</sub> deri korlo] bollam  
 I Aparna-ACC she C late did said  
 I told Aparna<sub>i</sub> that she<sub>\*i/j</sub> was late.
- b. ami Aparṇa-ke bollam [je o deri korlo]  
 I Aparna-ACC said C she late did  
 I told Aparna<sub>i</sub> that she<sub>i/j</sub> was late.

- Strikingly, scrambling a Comp-internal clause with a quantificational subject PJE across the indirect object **creates new binding possibilities** for the PJE:

### (12) Clausal scrambling creates new binding possibilities

- a. ami taar maa-ke bollam [je proti-ṭa chele deri korlo]  
 I his mother-ACC said C every-CL boy late did  
 I told his<sub>\*i/j</sub> mother that every boy<sub>i</sub> was late.
- b. ami taar maa-ke [proti-ṭa chele<sub>PJE</sub> je t<sub>PJE</sub> deri korlo]  
 I his mother-ACC every-CL boy C late did  
 bollam  
 said  
 I told his<sub>\*i/j</sub> mother that every boy<sub>i</sub> was late.

- c. ami [proti-ṭa chele<sub>PJE</sub> je t<sub>PJE</sub> deri korlo] taar<sub>i/j</sub> maa-ke  
 I every-CL boy C late did his mother-ACC  
 bollam  
 said  
 I told his<sub>i/j</sub> mother that every boy<sub>i</sub> was late.

- The lack of a WCO effect here suggests that the movement involved is A-movement, which would be surprising if it were the result of a probe which targeted the clause, given that clauses are generally assumed to be Caseless (Stowell, 1981).
- Quantificational subject PJE's also take scope over the matrix verb<sup>1</sup>:

### (13) PJE's take scope over the verb

- a. ami bollam [je proti-ṭa chele deri korlo]  
 I said C every-CL boy late did  
 I said that every boy was late. [say > ∀ (single speech act), \*∀ > say]
- b. ami [proti-ṭa chele<sub>PJE</sub> je t<sub>PJE</sub> deri korlo] bollam  
 I every-CL boy C late did said  
 I said that every boy was late. [\*∀ > say, say > ∀ (multiple speech acts)]

- Again, availability of a new scope relation suggests that this is movement to a matrix A-position.
- We have a bit of a dilemma here – previously we saw that on the surface, the **PJE appears to be within the clause**, but this evidence seems to suggest **it occupies its own matrix specifier at LF**.
- This, however, is normally how we think of **pied-piping!**

<sup>1</sup>It's unclear to me how to describe this scopal relation – here I have it described as involving the verb and the quantifier, but it perhaps could involve the quantifier scoping over an event-introducing head (i.e. v). The judgment can be made clearer seen by adding a matrix modifier *ek ek kore* 'one by one', which is felicitous in (13b), but not in (13a.)

- Various accounts of pied-piping, most notably von Stechow (1996) assume that at LF, the pied-piper occupies a specifier at the landing site of movement **on its own** (that is, not inside the pied-piped constituent).
- I argue that the above examples involve movement by the PJE to its own matrix specifier (specifically, to the landing site of VP-internal scrambling), which allows the PJE to c-command into the matrix clause.
- Later, I will argue that pied-piping involves an additional narrow syntactic movement step of the entire clause to a separate matrix specifier done in order to satisfy a PF interface condition.

## 5 A-scrambling-driven clausal pied-piping

- Literature on pied-piping, including von Stechow (1996), has focused on pied-piping driven by A-bar movement.
- Here, I'm positing pied-piping driven by movement to an **A-position**, specifically to the landing site of VP-internal scrambling. As far as I'm aware, this hasn't been previously argued for.
- There are a few other things that are strange about the PJE's movement to a matrix specifier – first of all, this is cross-clausal A-movement, or hyperraising.
- Despite the commonly held view that long scrambling always reconstructs (i.e. that it isn't A-movement), we now know that the story is more complicated. For instance, Korean long-distance scrambling has been shown to have A-properties:

(14) **Korean long scrambling has A-properties** (Cho, 1994)

kutul-ul<sub>i</sub> [selo-uy<sub>i</sub> chinkwu-ka] [John-i t kosohayssta-ko]  
 they-ACC e.o-GEN friend-NOM John-NOM sued-C  
 malhayssta  
 said

Each other<sub>i</sub>'s friends said that John sued them<sub>i</sub>.

- One may also worry that movement from the PJE's base position to an A-position in the matrix appears to involve a successive-cyclic movement step to Spec,CP, which has generally been assumed to be an A-bar position, and thus constitutes improper movement. However, Fong (2019) shows that cases of hyperraising in Mongolian stop in Spec,CP, which suggests that this position must have mixed A/A-bar properties.
- The clause peripheral positioning of the PJE also follows cross-linguistic generalizations about the position of the pied-piper with respect to the entire pied-piped element (Heck, 2008).
- Finally, clausal pied-piping is already independently attested in Bengali. In Bengali, *wh*-words can only take matrix scope when they appear to the left of the matrix verb. Simpson & Bhattacharya (2003) shows that in long distance questions we either have the option of moving just the *wh*-word to the matrix clause, or pied-piping the entire clause containing the *wh*-word.

(15) **Wh-movement-driven clausal pied-piping** (Simpson & Bhattacharya, 2003)

- a. Jon [<sub>CP</sub> ke cole gache]<sub>i</sub> bollo t<sub>i</sub>  
 Jon who left gone said
- b. Jon ke<sub>i</sub> bollo [<sub>CP</sub> t<sub>i</sub> cole gache]  
 Jon who said left gone  
 Who did Jon say left?

## 6 Pied-piping is driven by prosody

- One question which arises given this account: why is pied-piping obligatory when scrambling out of a *je* clause, especially given that we see it is optional in cases like (15).
- I argue that, at least in certain cases, pied-piping is driven by a PF interface condition on prosodic structure.

- I propose that the obligatoriness of clausal pied-piping when scrambling out of a *je* clause derives from the prosodic properties of *je*, as well as a condition which preserves cliticization relationships throughout a derivation.
- As noted by Hsu (2016), *je* is an enclitic in non-Comp-internal sentences – it cliticizes onto the PJE.
- What I propose is a prosodic analog to Fox & Pesetsky (2005)'s Order Preservation condition:

(16) **Cliticization Preservation:** Information about cliticization relationships, once established at the end of a given Spell-out domain, is never deleted in the course of a derivation.

- When the PJE moves to Spec,CP in order to undergo long scrambling, the entire CP undergoes Spell-out, and *je* encliticizes onto the PJE.
- Because this relationship is present at the end of the embedded CP Spell-out domain, it must be preserved throughout the entire derivation.
- In order to satisfy Cliticization Preservation while allowing the PJE to scramble to the matrix, we must pied-pipe the rest of the embedded clause.
- One piece of data in support of this idea: non-pied-piping long scrambling is attested in Bengali, but only out of post-verbal clauses with a null complementizer.

(17) **Long scrambling out of a complementizerless clause** (Bayer & Dasgupta, 2016)

Krisno maleria-te<sub>i</sub> bhablo [(\*)*je* Ram t<sub>i</sub> mara gache]  
 Krishna malaria-LOC thought C Ram die went

Krishna thinks that Ram died of malaria.

## 7 Pied-piping happens in the narrow syntax

- We have thus far only seen evidence that the PJE has moved in the narrow syntax, not the remainder of the clause. Perhaps we could satisfy Cliticization Preservation by post-syntactic movement of the remainder of the clause.
- As we see in (17), we can leave the rest of the embedded clause (i.e., the clause without its complementizer) in its base-generated position without causing any issues.
- PF movement of lightweight elements to satisfy prosodic requirements has been cross-linguistically attested (see for instance Bennett et al. (2016)), so why can we not move only *je* at PF?

(18) **Satisfying Cliticization Preservation by moving *je* at PF**

\* ami Aparṇa<sub>PJE</sub> je bollam [<sub>PJE</sub> deri korlo]  
 I Aparna C said late did

*Attempted:* I said that Aparna was late.

- I argue that the ungrammaticality of (18) suggests that the pied-piping involved in Comp-internal clauses occurs **entirely in the narrow syntax**.
- Because *je* is the head of the embedded CP, it can only undergo phrasal movement along with the rest of the embedded clause.
- Fox & Nissenbaum (2018) argue based on English parasitic gap licensing data that both the pied-piper and the pied-piped element occupy separate specifiers at LF<sup>2</sup>:

(19) **Pied-piping in the narrow syntax**

$[\Sigma_P \text{ PJE } [_{CP} \text{ PJE } je \dots ] [_{\Sigma'} \Sigma \dots [_{CP} \text{ PJE } je \dots ]]]$

<sup>2</sup>In fact, they argue that the pied-piper tucks into a covert inner specifier, but for simplicity of exposition, I assume no tucking-in here.

- And indeed, we see evidence that the clause moves along with the PJE at narrow syntax, and thus is also displaced at LF:

(20) **Principle C amelioration effects within the clause**

- a. ami o-ke bollam [je sikkok Aparṇa-ke apachanda kare]  
 I she-ACC said C teacher Aparna-ACC dislike did  
 I told her<sub>\*i/j</sub> that the teacher disliked Aparna<sub>i</sub>.
- b. ami [sikkok<sub>PJE</sub> je t<sub>PJE</sub> Aparṇa<sub>i</sub>-ke apachanda kare] o-ke  
 I teacher C Aparna-ACC dislike did she-ACC  
 bollam  
 said  
 I told her<sub>i/j</sub> that the teacher disliked Aparna<sub>i</sub>.

## 8 Conclusion

- The Bengali Comp-internal clauses we saw today involve:
  - clausal pied-piping...
  - driven by prosody...
  - to a matrix A-position...
  - from an embedded clause.
- These, individually, are really interesting properties, and together they make an interesting story about how the interfaces make demands to make a weird narrow syntax:
  - LF requires that the pied-piper occupies its own specifier to be interpreted,
  - PF requires that we preserve prosodic structure of the embedded CP,
- so we end up moving both elements into their own specifiers to satisfy both these interface requirements.
- There's still more work to be done to fill out the picture, though.

- This talk focused mostly on Comp-internal clauses which are driven by movement to the landing site of VP-internal movement, which is an A-position. However, PJE's can land in A-bar positions as well. How does this affect the interpretation of these Comp-internal clauses?
- Bengali seems to exhibit clausal pied-piping independent of *je* clauses, where there is no clear prosodic motivation. What determines whether a language can clausal pied-pipe? What determines whether a certain type of clause can pied-pipe?
- What might this expanded view of clausal pied-piping look like in other languages? (hint: look at Appendix A!)
- Clearly Cliticization Preservation as stated in (16) is too strong a condition. How should it be weakened? Are there certain kinds of prosodic relationships which are more important than others?

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## A Clausal pied-piping in Basque

- Basque exhibits *wh*-clausal pied-piping, and interestingly enough, the same binding facts seen in Bengali apply to Basque!

### (21) *Clausal pied-piping in Basque* (De Urbina, 1989)

- a. [Nor etorriko d-ela bihar] esan diozu Miren-i t?  
 who come AUX-C tomorrow said AUX Mary-DAT  
 Who did Mary say will come tomorrow?

### (22) *Binding out of a clause in Basque*

- a. Bere<sub>\*i/j</sub> ama-ri esan nion [mutil bakoitz-a;  
 his mother-DAT say AUX.PAST boy each-ABS.SG  
 berandu zetorre-la ]  
 late come.PAST-C  
 I told his<sub>\*i/j</sub> mother that each boy<sub>i</sub> came late.
- b. [Mutil bakoitz-a;  
 boy each-ABS.SG late come.PAST-C his  
 ama-ri esan nion.  
 mother-DAT say AUX.PAST  
 I told his<sub>i/j</sub> mother that each boy<sub>i</sub> came late.

- One of the reasons that these Basque facts are interesting is that Basque has a final complementizer, so we do not have overt evidence that the embedded subject occupies Spec,CP, as we do in Bengali.
- This leads me to wonder whether clausal pied-piping phenomena are more common than we realize, and whether we should be trying to analyze clausal movement facts of all sorts as clausal pied-piping facts.



## B Other Bengali complementizers

- Bengali has a rich inventory of initial complementizers, some of which, such as *jate* 'so that', exhibit a similar word order asymmetry as the one seen in (1-2):

(23) [(tumi) jate (tumi) Somoe SeS koro], ekhon (tomar) Suru  
 you so.that you on.time finish do now you.GEN start  
 kora ucit  
 do should

So that you finish on time, you should start now.

(24) ekhon (tomar) Suru kora ucit, [(*\*tumi*) jate (tumi) Somoe  
 now you.GEN start do should you so.that you on.time  
 SeS koro]  
 finish do

You should start now, so that you finish on time.

- There are also final complementizers, like *bole*. Unfortunately CPs headed by *bole* seem to be more complicated as regards clausal pied-piping than those headed by *je*, or those without an overt complementizer, so I don't know what to say about them yet.

## C Interpreting non-subject PJs, quantifiers below *je*

(25) ami taar maa-ke bollam [je sikkok proti-ṭa chele-ke  
 I his mother-ACC said [C teacher every-CL boy-ACC  
 boklo]  
 scolded

I told his<sub>\*i/j</sub> mother C the teacher scolded every boy<sub>i</sub>.

(26) ami taar maa-ke [sikkok<sub>PJE</sub> je t<sub>PJE</sub> proti-ṭa chele-ke  
 I his mother-ACC teacher C every-CL boy-ACC  
 boklo] bollam  
 scolded said.

I told his<sub>\*i/j</sub> mother that the teacher scolded every boy<sub>i</sub>.

(27) ami [sikkok<sub>PJE</sub> je t<sub>PJE</sub> proti-ṭa chele-ke boklo] taar  
 I teacher C every-CL boy-ACC scolded his  
 maa-ke bollam  
 mother-ACC said.

I told his<sub>\*i/j</sub> mother that the teacher scolded every boy<sub>i</sub>.

(28) \*ami [proti-ṭa chele-ke<sub>PJE</sub> je sikkok t<sub>PJE</sub> boklo] taar  
 I teacher C every-CL boy-ACC scolded his  
 maa-ke bollam  
 mother-ACC said.

- Why ungrammaticality? Improper movement. Recall, non-subjects need to move to embedded Spec,TopicP to avoid Relativized Minimality violation, and this is A-bar movement. Any subsequent movements, therefore, must be to A-bar positions, which the landing site of VP-internal movement is not.