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 Aparna 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\_PJE je t\_PJE deri korlo] bollam
      I Aparna C late did said
      I said that Aparna was late.
   b. * ami bollam [Aparṇa\_PJE je t\_PJE deri korlo]

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-loc notun jama kapor debe]
Puja-LOC new clothes give will

I told every boy, that someone will give him, 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.  
[
∀ > ∃ ,  
*∃ > ∀ ]

b. Hori [kono ek-ṭa chatr-er khata]i [prottek sikkok]-ke ti  
Hori some 1-Cl student-Gen copy each teacher-ACC  
dekhalo.  
showed  
Hori showed every teacher some student’s copy.  
[
∀ > ∃ ,  
∃ > ∀ ]

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$_{PJE}$ je $t_{PJE}$ 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$_{PJE}$ je $t_{PJE}$ 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 PJEs** (Hsu, 2016)

a. Jon [du-to chatro$_{PJE}$ je $t_{PJE}$ esheche] bollo  
John two-Cl student C come.PERF said  
John said that two students came.
b. Jon [ke\textsubscript{PJE} je \textsubscript{PJE} ase-ni] bollo
   John anyone \textsubscript{C} come-\textsubscript{NEG} said
   John said that no one came.

c. * Jon [kau-ke\textsubscript{PJE} je dadubhai \textsubscript{PJE} dekh-e-ni] bollo
   John anyone-\textsubscript{ACC} C grandfather see-\textsubscript{PERF}-\textsubscript{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:

\begin{align}
\text{(7) Movement of a non-subject to PJE position} \\
& \left[ \text{CP PJE}_{\text{NS}} [C' je [\text{TopicP PJE}_{\text{NS}} [\text{Topic topicP Subj} \ldots [\text{VP PJE}_{\text{NS}} \ldots]}
\end{align}

• Otherwise, movement to Spec,CP is ‘free’ for the subject:

\begin{align}
\text{(8) Movement of a subject to PJE position} \\
& \left[ \text{CP PJE}_{\text{Subj}} [C' je \ldots [\text{TP PJE}_{\text{SUBJ}} \ldots]
\end{align}

• 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:

\begin{align}
\text{(9) Inseparability of the PJE} \\
* \text{Aparna}_{\text{PJE}} ami [je \textsubscript{PJE} deri korlo] bollam
   Aparna I C late did said

   \text{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, \textit{je} is an affixal enclitic on the PJE – we can see that \textit{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).

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\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Boundary tones appear on both sides of Comp-internal clauses.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{\textit{je} carries the pitch peak for the PJE’s prosodic phrase.}
\end{figure}

• This prosodic relationship, between \textit{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, PJEs act as though they are in the matrix:

  (10) **Principle A effects**
  
  a. Aparṇa [nijePJE je tPJE deri korlo] bollo
     Aparna self C late did said
     Aparna; said that she; was late.
  
  b. * Aparṇa bollo [je nije deri korlo]
     Aparna said C self late did

  (11) **Principle B effects**
  
  a. ami Aparṇa-ke [oPJE je tPJE deri korlo] bollam
     I Aparna-ACC she C late did said
     I told Aparna; that she; was late.
  
  b. ami Aparṇa-ke bollo [je o deri korlo]
     I Aparna-ACC said C she late did
     I told Aparna; that she; 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 [je proti-ṭa chele deri korlo]
     I his mother-ACC said C every-CL boy late did
     I told his; mother that every boy; was late.
  
  b. ami taar maa-ke [proti-ṭa chelePJE je tPJE deri korlo]
     I his mother-ACC every-CL boy C late did said
     I told his; mother that every boy; was late.

- 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!

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1It’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_i [selo-uy_i chinkwu-ka] [John-i kosohayssta-ko] 
    they-ACC e.o-GEN friend-NOM John-NOM sued-C 
    malhayssta said
    Each other_i’s friends said that John sued them_i.

• 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.

    a. Jon [CP ke cole gache]_i bollo ti
        Jon who left gone said
    b. Jon ke_i bollo [CP ti 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.

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Movement within and without a clause
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 complemenizerless clause** (Bayer & Dasgupta, 2016)

Krishna malaria-*te* bhablo [*(*je) Ram *ti* mara gache]

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**

\[
\begin{align*}
\text{Attempted:} & \quad \text{I said that Aparna was late.} \\
\text{I} & \quad \text{Aparna} \quad \text{PJE} \quad \text{said} \\
\text{ami} & \quad \text{Aparna}\text{PIE} \quad \text{bollam} \quad \text{deri korlo} \\
\end{align*}
\]

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\(^2\):

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

\[
[\Sigma_P \text{PJE} [\Sigma_P \text{PJE} \text{je} \cdots ]] \\
[\Sigma \Sigma \cdots [\Sigma_P \text{PJE} \text{je} \cdots ]] \\
\]

\(^2\)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$_{i/j}$ that the teacher disliked Aparṇa$_{i}$.
   b. ami [sikkok$_{PJE}$ je t$_{PJE}$ Aparṇa$_{i}$-ke apachanda kare] o-ke
   I teacher C Aparna-Acc dislike did she-ACC
   bollam
   said
   I told her$_{i/j}$ that the teacher disliked Aparṇa$_{i}$.

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 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?

References


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-ì 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*ì*j ama-ri esan nion [mutil bakoitz-*ì*j boy each-ABS.SG berandu zetorre-la ] late come.PAST-C I told his*ì*j mother that each boy*ì*j came late.

b. [Mutil bakoitz-*ì*j berandu zetorre-la ] bere*ì*j boy each-ABS.SG late come.PAST-C his ama-ri esan nion.

mother-DAT say AUX.PAST I told his*ì*j mother that each boy*ì*j 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 PJEs, quantifiers below je

I told his_{i/j} mother that the teacher scolded every boy_{i}.

(27) ami [sikkok_{PJE} je t_{PJE} proti-ṭa chele-ke boklo] taar I teacher C every-CL boy-ACC scolded his maa-ke bollam mother-ACC said.

I told his_{i/j} mother that the teacher scolded every boy_{i}.

(28) * ami [proti-ṭa chele-ke_{PJE} je sikkok t_{PJE} 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.