

# Prosody-Driven Movement? Evidence from Bangla

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## ABSTRACT

This paper addresses a longstanding puzzle in Bangla syntax regarding the position of the complementizer particle *je* (cf. Bayer and Dasgupta 2010, Bhattacharya 2001 and Hsu 2015). Preposing of finite complement clauses is observed to be related to the position occupied by the complementizer *je* within the complement clause. Some earlier accounts have tried to explain the phenomenon with the help of information-structure-driven movements, while the other has been a syntax-phonology interface approach (Hsu 2015). This paper suggests a novel connection between the movement of an element to the left of the *je* particle and scrambling in Bangla. Finally, a syntax-phonology interface account along the lines of Hsu (2015) is suggested, where the final positioning of the complementizer and the complement clause is determined by an interaction of post-syntactic constraints.

## 1 Introduction

Finite clausal complements usually occur in the post-verbal position in Bangla. However, a fronted counterpart of a finite complement clause may be found in the preverbal position. A regular post-verbal finite complement clause and its fronted counterpart are given below in 1(a) and 1(b) respectively. The fronted counterpart could optionally contain a resumptive pronoun or a demonstrative in the pre-verbal argument position, as in 1(b).

- (1) a. ram shuneche [(je) Raja (\*je) cakri-Ta peyeche].  
Ram heard [that Raja job-CL got ]  
'Ram has heard that Raja has received the job.'
- b. [(\*)je) raja (je) cakri-Ta peyeche] Ram (ta) shuneche.  
[ Raja that job-CL got ] Ram pron heard  
'That Raja has received the job, Ram has heard.'

1(a) and (b) show that interestingly, the placement of the clause correlates with the internal structure of the clause. If the clause is post-verbal, then *je* is obligatorily initial (1a). If the clause is preverbal, then *je* is obligatorily non-initial (1b).

These set of facts raise an interesting question- **Why are the fronting of the clause and the movement to the position preceding *je* tied to each other?** The rest of the paper briefly touches upon the Information Structural (henceforth IS) accounts of the movement to the pre-*je*

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position, then elaborates on the properties of the movement to the pre-*je* position and points out some potential problems with an IS account, and finally tries to propose an alternative solution to the above puzzle.

## 2 Information-Structural Accounts

### 2.1 Bayer and Dasgupta (2010)

This account argues that *je* comes in two shapes in the lexicon- a regular complementizer *je* that occurs in post-verbal complement clauses, and another one with an uninterpretable Emphatic Topicalization (henceforth ET) feature that looks for a matching phrase with an interpretable ET feature. Given that topicalization is a root phenomenon, ET fails to take scope within the embedded clause, thereby driving the fronting of the whole complement clause to the matrix clause. The following section describes the properties of the movement to the pre-*je* position.

### 3 Movement to the pre-*je* position

Movement to the pre-*je* position exhibits the following properties:

I. The movement is not limited to the subject, as seen in the example 1(b) above. It would hence also be possible in 1(b) to fill the pre-*je* position with *cakri* ‘job’.

(2) [cakri-Ta je raja peyeche] ram (ta) shuneche.  
 job- CL that Raja received Ram pron heard  
 ‘That Raja has received the job, Ram has heard.’

II. There is no restriction on how many elements within the complement clause can undergo this movement. That is, it is possible to move both *Raja* and *cakri* before *je*, and in either order.

(3) a. raja cakri-Ta je peyeche ram jane.  
 Raja job-CL that received Ram knows  
 ‘That Raja has received the job, Ram knows.’  
 b. cakri-Ta raja je peyeche ram jane.  
 job-CL Raja that received Ram knows  
 ‘That Raja has received the job, Ram knows.’

III. There is also no major restriction on the category of the phrases that can undergo this movement, except for VPs which fail to undergo this movement.

(4) \*peyeche je raja cakri-Ta/ \*cakri-Ta peyeche je raja ram jane.  
 received that Raja job- CL job- CL received that Raja Ram knows  
 ‘That Raja has received the job, Ram knows.’

Object DPs undergoing this movement need to be either referential elements that can receive a topic interpretation, or focused elements. Such a restriction does not hold for subject DPs (cf. Hsu 2015). The following two examples are taken from Hsu (2015) (gloss and translation mine, capital letters indicate focus in all the following examples). In 5(a), the non-referential and non-focused subject can undergo the movement, while in 5(b) it is ungrammatical for such an object to undergo the movement. In 5(c) however, when the object is focused, the movement is allowed.

- (5) a. Jon [kew je asheni] (ta) janalo.  
 John anyone that came not pron informed  
 ‘John informed that no one came.’
- b. \*Jon [kau-ke je dadubhai dekhe-ni] (ta) janalo.  
 John [anyone-Dat that grandfather seen-not] pron informed  
 ‘That grandfather didn’t see anyone, John informed.’
- c. Jon [kauke-I je dadubhai dekhe-ni] (ta) janalo.  
 John anyone-Foc that grandfather seen-not pron informed  
 ‘That grandfather didn’t see ANYONE, John informed.’

Similar examples can also be provided with other indefinite object DPs.

- d. raja [Ek-Ta gari je shudhin-ke dhakka mereche] (ta) jane.  
 Raja one-CL car that Sudhin-Dat push hit pron knows  
 ‘That a car hit Sudhin, Raja knows.’
- e. \*raja [Ek-Ta gari je shudhin kineche] (ta) jane.  
 Raja one-CL car that Sudhin bought pron knows  
 ‘That Sudhin has bought a car, Raja knows.’
- f. \*raja [Ek-Ta gari-I je shudhin kineche] jane.  
 Raja one-CL car-Foc that Sudhin bought knows  
 ‘That Sudhin has bought a CAR, Raja knows.’

This subject-object asymmetry poses a challenge for the accounts that treat the movement to the pre-*je* position as information structure-driven.<sup>[1]</sup> This rather makes it look similar to other second-position effects like V2, which show similar asymmetries. The following section further lays out some differences between the pre-*je* movement with regular topicalization in Bangla.

#### 4 Further Problems with a Topic Analysis

Bangla bears a regular topic marking particle *-to*. Following Bayer et. al. (2014), *to-* in Bangla is being considered to be a left-peripheral head, to the specifier of which phrases with certain

information structural features are pulled up, i.e., *to-* in Bangla is being considered to occupy a fixed position in the following discussion.

I. *-to* can be used only in root contexts (cf. e.g. 6a taken from Bayer et. al. 2014). Marking an embedded element with *-to* obligatorily involves movement of the phrase to the matrix position. These facts are clearly different from the case with *-je*, as noted earlier. E.g. 6(b) shows that clauses with *-je* marked phrases may occur in embedded positions.

- (6) a. \*ama.r mon-e hocche na [Se-dik theke biSes subidha hObe to]  
 my.Gen mind-Loc is not this-side from special convenience be.will TO  
 Intended: ‘I don’t think that from this side special support will come.’
- b. ami shunlam je ram je chakri peyeche ta raja jane.  
 I heard that Ram that job received pron Raja knows  
 ‘I heard that Ram has received a job, Raja knows.’

II. Topicalization creates an island for wh licensing. As Kidwai (2000:47) notes, similar effects are observed in Hindi for *-to* marked constructions.

- (7) a. \*kon-to ayega Hindi  
 who-Top will come  
 Intended- ‘Who will come?’
- b. \*ram-to kothay jabe? Bangla  
 Ram-Top where will go  
 Intended- ‘Where will Ram go?’
- c. \*ke-to Kolkata jabe?  
 Who-Top Kolkata go  
 Intended- ‘Who will go to Kolkata?’

However, wh expressions can take scope within a pre-verbal *je* clause.

- (8) a. [raka je kothay cakri kOre] sudhin jane.  
 Raka that where job does Sudhin knows  
 ‘Sudhin knows where Raka works.’

Wh-expressions can also occupy the pre-*je* position.

- b. [ke je ram-ke nimantran koreche] ami jani.  
 Who that Ram-Dat invitation did I know  
 ‘I know who has invited Ram.’

III.-to topicalisation can target VPs

- (9)    boi-Ta    poreche-to    raka.  
      book-CL read-Top    Raka  
      ‘As for reading the book, Raka has done so.’

However, moving VPs to the pre-*je* position sounds degraded.

- (10)  a. ??ashbe        je   ram ami    bujhini.  
      Will come   that   Ram I       understand-not  
      Intended- ‘That Ram would come, I didn’t understand.’
- b. ??boi-Ta   poreche je   raka, ami   jantam na.  
      book-CL read    that Raka I    knew not  
      Intended- ‘That Raka has read the book, I didn’t know.’

The following section digresses into the prosodic features of *je* before returning to the explanation of the above facts.

## 5 A short aside into the prosody of *je* (based on Hsu 2015)

Hsu (2015) points out, following Fitzpatrick-Cole (1991), that the Bangla PWD is minimally bimoraic. Hsu suggests that “the complementizer *je* does not undergo lengthening, indicating that it is prosodically realized as a syllable that does not additionally project to a PWD.”

Given that *je* is prosodically deficient, it should be banned from occurring at the edge of an intonational phrase. This can be formalized by the constraint Strong Start (Selkirk 2011).

### Strong Start (Benett et. al. 2016:198)

“Prosodic constituents above the level of the word should not have at their left edge an immediate sub-constituent that is prosodically dependent.”

Hsu also shows, based on Khan (2008) and Hayes and Lahiri’s (1991) work on Bangla intonation that pre-verbal IC clauses form separate intonational boundaries, while post-verbal clauses don’t. This makes the pre-*je* movement phenomenon look like a prosodically-conditioned movement, very similar to the second position clitic phenomena such that *je*, a prosodically weak element is blocked at the beginning of an intonational phrase in the fronted clauses.

### Prosodic Inversion?

Issues of clitic placement have often been addressed with the help of a mechanism called prosodic inversion.

Prosodic Inversion is a filtering effect in phonology that rules out constructions in which a clitic is found sentence initially. Clitics are allowed to move in PF in order to satisfy this requirement. This is known as prosodic inversion. Given the well-defined motivation for PF movement, the

movement ends up being very local (It places the clitic in a position immediately following the first stressed word).

One might consider explaining the placement of *je* with the help of prosodic inversion, given that *je* is claimed to be prosodically deficient. However, this account becomes a problem for the Bangla data because prosodic units of varying number and type can precede the element *je*. Specifically, it is completely uneconomical, under a prosodic inversion account, that multiple elements would move to the pre-*je* position to satisfy the constraint.

## 6 Syntactic Nature of the Movement

The movement to the pre-*je* position seems to obey syntactic constraints of the language like the following-

### I. Cannot strand a Preposition

- (11) a. \*[Ram-er *je* shathe Robi porto], Raja jane.  
           [Ram-Gen that with Ravi studied] Raja knows  
           Intended- ‘That Ravi was a classmate of Ram’s, Raja knows.’

### II. Cannot break a genitive DP

- b. \*Ram-er *je* chatro cakri peyeche], Raja jane  
           [Ram-Gen that student job got] Raja knows  
           Intended- ‘That Ravi was a bachmate of Ram’s, Raja knows.’

### III. Cannot violate the Coordinate Structure Constraint

- c. \*Ram-er poribar *je* ar Anup-er bondhura bera-te gache, ...  
           Ram-Gen family that and Anup-Gen friends tour-Inf gone  
           Intended- ‘That Ram’s family and Anup’s friends have gone for a tour,...’

Following examples show that these facts do not hold for canonical clitic second phenomena. In the following example 12(b), the clitic can occur in between a syntactic constituent, while in (13) the clitic breaks up a disjunction structure.

### Serbo-Croatian (Bošković 2001)

- (12) a. \*Ciju zenu *li* (Peter) voli?  
           whose wife Q Peter loves  
           ‘Whose wife does Peter love?’  
       b. Ciju *li* zenu (Petar) voli?

### Irish (Benett et al. 2016)

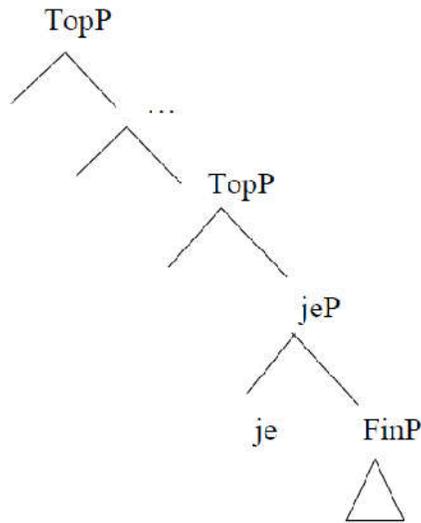
- (13) is cuma ’na shamhradh e’ nó ’na gheimhreadh  
       Cop.Pres no.matter Pred summer it or Pred winter  
       ‘It doesn’t matter whether it’s summer or winter.’

Therefore, the *pre-je* movement doesn't look like a PF movement. It is a syntactic movement. It has been shown in Dasgupta (2007) that when multiple elements precede the *je*, the elements preceding the immediately *pre-je* element need to be interpreted as topics.

- (14) a. ??[kake/Robike-i Ram je boi-Ta diyechhe] ami jani.  
 who/Ravi-Foc Ram that book-CL gave I know  
 Intended- 'I know who Ram gave the book to/ That to Ravi Ram gave the book, I know.'
- b. ??keu Ram-ke je pachondo kOre na ami jani.  
 anyone Ram-Dat that like does not I know  
 Intended- 'That nobody likes Ram, I know.'

Based on these facts, I suggest that *jeP* is merged below a layer of Topic projections, and the *pre-je* element moves up to the specifier of this *jeP*<sup>2</sup>.

(15)



<sup>2</sup> Due to reasons that will be made clear in the later parts of this article, I do not consider the *je* head to be either the Force or the Fin head. Therefore, I call it *JeP* at this point for lack of a better label.

## 7 Developing an Account

### 7.1 The pre-*je* movement

From the discussion so far, it can be concluded that the pre-*je* movement is neither information structure driven, nor prosodic. The current account makes the following proposal about the pre-*je* movement.

- It is a regular A movement of the closest DP (or PP/AdvP) to the spec *je* position. Subjects, usually being the closest, mostly move up to this position.
- Objects can move into this position only when they have scrambled above the subject<sup>3</sup>.

(16) [<sub>jeP</sub> CAKRI<sub>i</sub> [ je [<sub>TP</sub> t<sub>i</sub> [<sub>TP</sub> Raja... [<sub>VP</sub> t<sub>i</sub> peyeche]]]]]

- Subsequent movements target layers of topics above the *jeP*.

(17) [<sub>TopP</sub> cakri<sub>k</sub> [<sub>jeP</sub> Raja<sub>i</sub> [ je [<sub>TP</sub> t<sub>i</sub>... [<sub>VP</sub> t<sub>k</sub> peyeche]]]]]

However, by an independent restriction on scrambling in Bangla, indefinite non-focused objects can't scramble out of the VP.

(18) \*Ek-Ta gari Ram kineche.  
One-CL car Ram bought  
Intended- 'A car, Ram has bought.'

(19) Ek-Ta GARI Ram kineche.  
One-CL car Ram bought  
Intended- 'A car, Ram has bought.'

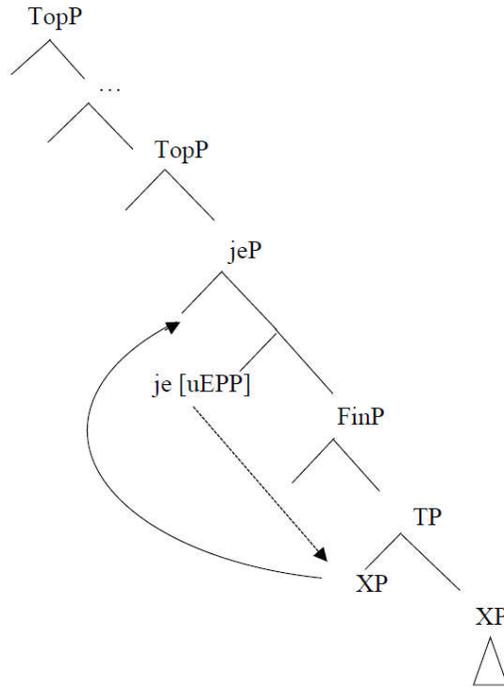
This nicely derives the subject-object asymmetry with respect to the pre-*je* movement described in section 3. We are now left only with explaining the ungrammaticality of sentences with VPs moved to the pre-*je* position (e.g. 4). Interestingly, Bhatt and Dayal (2007) note that leftward scrambling of VPs to the pre-subject position is not allowed in Hindi. I argue that the facts also hold true of Bangla and leftward scrambling of VPs is also impossible in Bangla. Therefore, it can be concluded that moving VPs to the pre-*je* position is also not allowed.

We are still left with the question of what the nature of this pre-*je* movement is. Is the movement feature-driven or obligatory? I argue that this movement is an obligatory movement driven by an EPP feature on the head *je*, that pulls up the closest XP in its c-command domain.

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<sup>3</sup> Subject raising from vP to TP has not been shown in (15) and (16).

(20)



However, since I do not posit two different entries for *je* in the lexicon, one for the regular complementizer *je* and another for the non-initial *je* under discussion in this paper, one crucial question that is raised at this point is how the complementizer *je* appears in the initial position of the embedded clause if it bears an EPP feature? The answer to this question will be provided in the following section.

## 7.2 Position of the Complement Clause-A PF Ordering Account

I claim that the movement to the pre-*je* position is a regular and obligatory syntactic movement. The fronting of the clause is also a regular syntactic movement which results in the clause being interpreted as presupposed or given. However, the final positioning of the clause and the *je* head is controlled by an interaction of post-syntactic constraints.

### Assumptions

Manetta (2006) proposes that the complementizer in Hindi/Urdu is not a real C head but a boundary marker. A major motivation for the proposal is the fact that the Hindi/Urdu complementizer can occur with indicatives and interrogatives alike, thereby, not marking the Force of the complement. The facts behind the proposal hold true in Bangla as well.

The complementizer *je* in Bangla can be found in indicatives, subjunctives, interrogatives etc., thereby having no role in determining the Force or finiteness of the sentence.

### Claim

Given that *je* has no role in determining the Force of the sentence, *je* is always merged low in the structure. It plays the role of a clause-edge marker, and is hence repositioned to the clause boundary at PF to mark the edge of the clause. This is motivated by the PF constraint Mark Edge.

*Mark Edge- The edge of the clause needs to be marked at PF.*

In a post-verbal clause, the complement CP does not form an intonational phrase boundary (Hsu 2015). The *je* head is moved past the phrase at the spec jeP (i.e. the phrase satisfying the EPP) to the edge of the clause to satisfy Mark Edge.

However, in a post-verbal clause, the *je* head results in a violation of Strong Start when it is moved to the edge, a constraint that would block a prosodically deficient element to appear at the left edge of an intonational phrase.

### Strong Start (Benett et. al. 2016:198)

“Prosodic constituents above the level of the word should not have at their left edge an immediate sub-constituent that is prosodically dependent.”

I propose the following ranking of the two PF constraints defined here-

*Ranking of the constraints- Strong Start > Mark Edge*

Due to an interaction of the constraints, *je* is blocked from moving to the edge in the pre-verbal clauses and gets spelled out in its original position.

Input	Strong Start	Mark Edge	Faithfulness
Post-verbal CP ( <i>je</i> non initial)		*!	
☞ Post-verbal CP ( <i>je</i> initial)			*
☞ Pre-verbal CP ( <i>je</i> non initial)		*	
Pre-verbal CP ( <i>je</i> initial)	*!		*

Tableau 1

This clearly derives the pattern of why preverbal clauses require the *je* to be non-initial, while post-verbal clauses require it to be initial.

## **8 Explaining the Information Structural Effects**

It has been noted earlier that some of the previous studies connect the pre-*je* movement to IS features. That indicates that the pre-*je* element seems to be bearing certain IS properties, which has led to such arguments. However, given that the current account argues for the pre-*je* movement to be non IS-driven, this account would still need to explain the observed IS properties of the pre-*je* phrase.

A scrambled element is interpreted as discourse-old or given (Reinhart 1995, Neeleman and Reinhart 1998 and others). The same has been shown for Hindi in Kidwai (2000). A scrambled element is interpreted as discourse old or given, while the element in the pre-vP region is interpreted as focus (Kidwai 2000:115, transcription mine). The same can be shown for Bangla in (22).

(21) kitabeN mɛN laya huN Hindi  
 Books I brought am  
 ‘The books, I brought.’

(22) a. Q: ram ki kineche? Bangla  
 Ram what bought  
 ‘What did Ram buy?’  
 A: ram ghorī kineche.  
 Ram watch bought  
 ‘Ram bought a watch.’  
 A: ??ghorīTa ram kineche.  
 Watch-CL Ram bought  
 Intended: ‘Ram bought a watch.’  
 b. ghorī-Ta ram kineche.  
 watch-CL Ram bought  
 ‘This watch, Ram has bought.’

It is crucial to note that the clauses with non-initial *je* under consideration in this paper are also usually selected by factive predicates and are interpreted as discourse-given.

- Subjects of a presupposed clause naturally receive a topic interpretation.
- When the objects or other XPs scramble across the subject, they also receive a topic interpretation.

Hence, under the above system, the movement to the pre-*je* position is not an IS-driven movement. The information structure effects result from independent facts about how and where the elements land<sup>4</sup>.

## 9 Conclusion

This paper discusses an old puzzle of Bangla pertaining to the link between the position of a finite complement clause and the complementizer *je*. The paper elaborates on the properties of the

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<sup>4</sup>It is also interesting that similar left peripheral positions are also available with a number of C-like elements in Bangla- among them relative pronouns, conditional Cs, subjunctive C, and other discourse particles like *kintu*, *naki* (Bhadra 2017 claims that *naki* bears a similar EPP feature). All of these allow multiple topic-like elements to precede them. The restriction on these elements is also very similar to that of the pre-verbal IC clauses.

movement to the pre-*je* position and makes a novel suggestion that movement to the pre-*je* position in preposed complement clauses is not driven by IS effects. It is rather a regular A movement constrained by other constraints operating on scrambling movements in the language. Along the lines of Hsu (2015), the paper suggests a syntax-phonology interface account for the connection between clausal fronting and the pre-*je* movement. By this account, post-syntactic constraints rule out fronted clauses with an initial *je* due to a violation of Strong Start. This account also derives the subject-object asymmetry w.r.t to the pre-*je* movement.

### Acknowledgement

Thanks to Stefan Keine for valuable feedback and insights on the paper, thanks to Andrew Simpson, Roumyana Pancheva, three anonymous reviewers, the audience at USC Syntax plus and the audience at FASAL8 for feedback and comments, all of which helped shape this paper.

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