

Copula-less Nominal Sentences and Matrix-C⁰ Clauses: A *Planar* View of Clause Structure *

Tanmoy Bhattacharya

Abstract

This paper is an attempt to unify the apparently unrelated sentence types in Bangla, namely, copula-less nominal sentences and matrix-C clauses. In particular, the paper claims that a “Planar” view of clause structure affords us, besides the above unification, a better account of the *Kaynean Algorithm* (KA, as in Kayne (1998a, b; 1999)) in terms of an interface driven motivation to break symmetry. In order to understand this unification, the invocation of the KA, that proclaims most significantly the ‘non-constituency’ of the C and its complement, is relevant if we agree with the basic assumption of this paper that views both Cs and Classifiers as disjoint from the main body (plane) of the clause. Such a disjunction is exploited further to introduce a new perspective of the structure of clauses, namely, the ‘planar’ view. The unmistakable non-linearity of the KA is seen here as a multi-planar structure creation; the introduction of the C/ CLA thus implies a new plane introduction. KA very strongly implies a planar view of clause structure. The identification of a plane is considered to be as either required by the C-I or the SM interface and it is shown that this view matches up with the duality of semantics, as in Chomsky (2005). In particular, EM (External Merge) is required to introduce or identify a new plane, whereas IM (Internal Merge) is inter-planar. Thus it is shown that inter-planar movements are discourse related, whereas intra-planar movements are not discourse related.

Keywords: copular sentences, classifiers, epistemicity, Kayne, internal/ external merge

1 Introduction

Instead of deriving the differences between languages by the parametric research technology, this paper looks at the possibility of deriving these differences from within each concerned language; the task according to this strategy is therefore to discover the *pressure points* created in a language, which erupt into the so-called inter-language differences, and to locate these pressure points at the Interfaces; Minimalism as a framework provides this opportunity.

If we look at the logic of the Kaynean Algorithm, or KA (discussed in details in section 2.1), then it is clear that the sequence of steps seems to be directed towards the goal of evacuating the VP, or to create a remnant VP. The reading presented in this paper views the breaking up of the VP as an attempt to create a multi-clausal structure from a monoclausal structure. Crucially though, a translation of this algorithm (inspired by the reading above) in terms of a planar view of clause structure, can capture the essence of the KA in its fullest, affording a unification of the two clause types that we will take up for study in this paper, namely, matrix-C clauses and copular constructions. The unmistakable non-linearity of the KA is seen here as a multi-planar structure creation. Introduction of the C/ CLA (classifier) in the derivations of these two constructions will be seen to imply a new plane introduction. KA very strongly implies a planar view of clause structure.

The paper is organised as follows: section 2 introduces C-internal clauses in Bangla and proposes the Revised Standard Non-Linear Kaynean Algorithm (KA) with respect to Bangla

* Two earlier versions of the paper were presented in V Asian Glow in 2005 in New Delhi and in NTNU, Norway in 2011; I am thankful to audiences at these talks, especially Hilda Koopman, Norvin Richards and Tim Stowell.

- (6) *ami jani na [ke je eTa koreche] Bangla
I know not who that this done

The interesting question that can be raised with respect to the Bangla data is the following (following Bhattacharya (2002)):

- (7) Why must an initial element move inside a clause XP to enable that clause to move inside another clause YP?

One answer to this question might lie in the meaning of the C-internal sentences. On the surface, and at the first approximation, the internal-C sentence seems to have the same underlying meaning as the one with the initial C, i.e., the meaning for (1) is also the meaning for (2a). However, this is not so; the latter in fact has the following meaning:

- (8) ‘(as for) the fact that mother will come, John knows it’

We cannot miss the fact that it is actually a topicalised version of the earlier sentence. The English translation makes the topicalised meaning clear. Does the so-called COMP have a role to play in giving the clause a topicalised meaning? Since topicalisation is a root phenomenon, this can partly explain why the complement must move up. A part of the derivation can therefore be rescued by appealing to the fact that it is ‘mother’ (in (2a)) which really carries the topic feature and that pied piping of the CP results in a topicalised meaning of the whole complement when it is moved to a pre-verbal position. However, this is theoretically unimplementable.

2.1 Non-Linear Kaynean Algorithm

A more interesting solution may be advanced if we consider Kayne’s (1998a, b; 1999) radical idea that the C and its complement do not form a constituent. Kayne demonstrates this via the P-Comp *di* in (9). The P-Comp in this model does not form a constituent with the infinitival complement IP *cantare*.

- (9) Gianni ha tentato di cantare
John has tried to sing-inf

Rather, the derivation proceeds as follows:

- (10) a. Merge matrix V with TP: *tentato + cantare*
b. Merge Comp with (a): *di + {tentato, cantare}*
c. Comp attracts TP to its Spec: *cantare, di {tentato, t_{IP}}*
d. A new head W is merged and C adjoins to it:
di+W {cantare, t_{di} {tentato, t_{IP}}}
e. Comp(+W) attracts remnant VP to [Spec,W]:
{tentato, t_{IP}}, di+W {cantare, t_{di} t_{VP}}

The step in (10b) crucially implies that *di* and *cantare* do not form a constituent. Kayne addresses a good many unresolved problems in Romance syntax by letting the derivation proceed in this manner. For more immediate concerns, let us see if this algorithm works for matrix COMPs in an SOV language.

The algorithm derives the unmarked (postverbal) order (11); shading indicates items to be moved:

- (11) John janto [je Sudha phOl kheyechē]
 John knew that Sudha fruit eat.ppl.3
John knew that Sudha has eaten fruit.
- (12) a. [v janto] + [TP Sudha phOl kheyechē]
 b. [COMP je] + [v janto] + [TP Sudha phOl kheyechē]
 c. [IP Sudha phOl kheyechē] [COMP je] + [v janto] + t_{IP}
 d. [COMP je] [TP Sudha phOl kheyechē] t_{COMP} + [v janto] + t_{TP}
 e. [v janto] + t_{TP} [COMP je] [TP Sudha phOl kheyechē] t_{COMP} + t_{VP}

However, it cannot derive the crucial order of (2a) and some other orders that I do not discuss here.

2.1.1 Some problems of KA. However, this algorithm has a number of problems. Apparently, since the constituency of the CP is destroyed (only in step (12d) does C...TP come together in the right order), CP formation seems to be delayed. However, viewed in terms of traditional tree structures, step (12c) should complete the CP (by moving the TP to its specifier), and turn it into a phase resisting further movement out of it. However, this is not the case since we notice subsequent movement out of this CP, even from its complement domain (as in step (12e)). In this step, the remnant VP is too deep to be attracted to the specifier of the C+W complex. Furthermore, in step (12d) the introducing of the phantom head W (as in the original Kaynean algorithm, though not shown here), to which the COMP moves up to, is unmotivated.

2.1.2 Solutions to the problems of KA. Some possible solutions can be offered to the problems raised in the previous subsection. The first problem of a CP-phase resisting further movement out of it in step (12c) above can be addressed with regards to the true nature of the PIC (Phase Impenetrability Condition), which does not prevent movement of the C head since the head of the phase drives further movement (Chomsky (2006) states that IM (Internal Merge) should be driven only by phase heads, satisfying the edge feature (EF) of the phase head).

The other problems noted, namely, with respect to movement of the complement domain and merging of the unmotivated W head, are plausibly dealt with if the PIC is followed; accessibility of H and its edge is only up to the next strong phase. Thus, in (13), the relevant elements of HP are accessible to operations within the smallest strong ZP phase, but not beyond it:

- (13) [ZP Z ... [HP α [H YP]]]

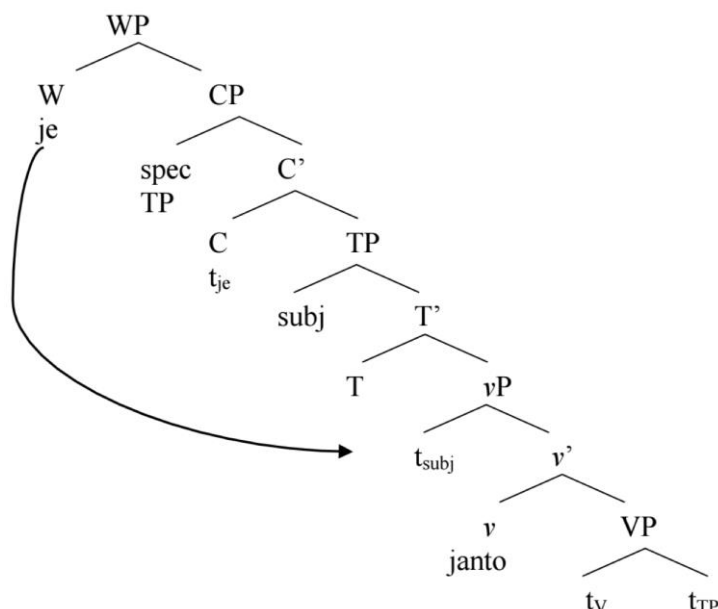
Note that the complement domain YP is not accessible at ZP, as per the PIC. If we go back to (12), step (e) is clearly in violation of this condition since the remnant VP movement is movement of the complement domain like YP. If the COMP moves to a pre-merged W head, then we can assume that the VP movement takes place within the WP, specifically to the specifier of WP. This problem may be resolved by invoking the intervention effect as below:

- (14) A probe can agree with goals in its domain as long as a goal with no unvalued features is found, after which further search is blocked (Chomsky, 2006).

Thus, the EF (a feature of a lexical item (LI) that permits it to merged) at W scans down the tree and can seek a goal only until it encounters another phase. However, note that whether VP-movement occurs prior to any intervention effect, we need to sort out expected problems that are faced while trying to marry a Kaynean system of derivation with that of

mainstream Minimalism. The KA starts off by merging the main verb with the TP complement; it is rather silent about the status of the subject (*Gianni* in (9)). If we try to take the subject into account then it is obvious that we will need to merge also a small *v*, projecting a *vP*. This in turn implies that any probe from the W position in the diagram will not find a goal until the *vP*:

(15)



In the true spirit of (14), the *vP* itself can be a goal, but nothing inside it or beyond it can. I will address the third problem in the next subsection.

2.1.3 The Revised Kaynean Algorithm (RKA). As we noted above, the KA fails to account for the topic cases as in (16), which are instead derived as in (17). Here, I depart from the KA by moving not the TP but the VP in step 2, and by moving not the remnant VP but the remnant IP in step 4.

- (16) John [Sudha je phOl kheyechē] janto
 Sudha C fruit eat.ppl.3 knew
As for the fact that Shudha has eaten fruits, John knew it.

- (17) a. [v janto] + [IP Sudha [VP phOl kheyechē]]
 b. [COMP je] + [v janto] + [IP Sudha [VP phOl kheyechē]]
 c. [VP phOl kheyechē] [COMP je] + [v janto] + [TP Sudha tVP]
 d. [COMP je] [VP phOl kheyechē] tCOMP + [v janto] + [TP Sudha tVP]
 e. [TP Sudha tVP] [COMP je] [VP phOl kheyechē] tCOMP + [v janto] + tTP

Given the reasoning in the previous section about accessing the *vP*/ VP at WP, if W also projects a phase, then the final step in either the KA or RKA is illegal in any case (due to PIC/EF effects). However, I would suggest that this is foreseen in KA. Thus there is good reason for keeping the phantom head introduction (W) as a part of the KA; since only the target projects (Chomsky, 1995a), the resulting structure after the introduction of W cannot be another CP, thus preventing the formation of another phase which in turn bars further movement. We thus address the problem associated with motivating the introduction of the head W.

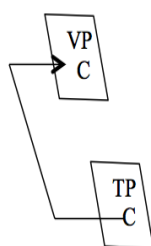
However, the movement of the COMP *je* to the phantom head *W* still needs to be justified. I discuss $C \rightarrow W$ movement in the next section.

2.2 Trigger for Head Movement

In KA, *C* and its complement *TP* are separated until the step (c) above in (12); this is when the *TP* and its *C* come together, but not necessarily in the required order. This is followed by the movement of the *C* which then gives what we would traditionally start with: *C+TP*.

The reading of this particular sequence of movement that I offer is as follows: breaking up the *VP* (consisting of *V+TP*) in the KA, by moving the *TP* away, is an attempt to create a multi-clausal structure from a monoclausal structure. The structure created in (12) after following the KA can be seen as creating a biclausal structure. Thus the logic of creating a remnant *VP*, and moving it subsequently, is to obtain a biclausal structure. Notice that in the process of the two crucial movements, i.e., of *TP* and of (remnant) *VP*, the parts of the *VP* get distributed; more specifically, both the *TP* and the *VP* sans the *TP* get separately associated with *C*. This can be considered as giving the effect of two *C*s separately associated with different chunks of the event. This is shown in (18), which clearly justifies the phantom head *W* of Kayne's algorithm:

(18)



The RKA proposed in (17) tries to create a different remnant (rather than a *VP* remnant as in the original KA), namely, a *TP* remnant. Technically, this is justified by noting that this is less costly since it takes advantage of the fragility between the EA (external argument) and the *VP* that is a characteristic of every *TP*. Empirically too, *TP* remnant movement produces sound results; this is shown below:

(19) *Remnant VP movement*

- a. hOyto [TP John [kal rate phOl kheyechē]] vacate VP →
probably last night.loc fruit eaten
- b. phOl hOyto [TP John [kal rate kheyechē]] remnant VP →
- c. * kal rate kheyechē phOl hOyto [IP John t_{VP}]

(20) *Remnant IP movement*

- a. hOyto [TP John [kal rate phOl kheyechē]] vacate TP →
- b. kal rate phOl kheyechē [hOyto [TP John t_{VP}]] remnant TP →
- c. John kal rate phOl kheyechē hOyto
Probably, John ate fruit last night.

With a pre-sentential adverb like *hOyto* 'probably', it is seen that creating a remnant *TP* and then moving it to a higher specifier produces a grammatical sentence.

3 Non-Linearity: A Plane View of Interfaces

In this section I make the theoretical move of introducing a new framework of dealing with the complex sentence types that we have been discussing, which is driven by the fact, now established, that the KA is unmistakably non-linear. The sequence of merge and move that is part of the KA can be considered to be deliberately put in place to capture non-linearity. As noted in the previous section, the KA ‘distributes’ parts of the events to create a biclausal structure. This idea seems to reflect what is proposed in Chomsky (2006), namely, that T inherits its features and *Agree* from C, as it is desirable to spread to two domains. I will take this to mean that it is desirable to consider derivations to consist of planes.

However, the real question is, why is non-linearity needed? A simple answer would be that non-linearity is needed only if sentence structure is assumed to be non-linear to start with. To make this proposal more concrete, let us assume that C is that crucial fulcrum which introduces a new plane. Along with this assumption, we make the further minimalist assumptions discussed below.

For example, we will assume that planes must be identified since they are required by the interfaces. In particular, the notion of ‘duality of semantics’ that captures two different types of semantic interplay within a clause, namely, θ -semantics and discourse/ peripheral semantics, is captured through a biplanar/ multiplanar structure. The details of the movements across and within planes are as follows:

- (i) IM (Internal Merge) is mostly required to identify a new plane, whereas EM (External Merge) either introduces a new plane or is intraplanar; IM movements are required for discourse semantics (topicality by C, specificity by CLA, etc.) to be displayed and they can be either inter- or intra-planar; in other words, planes represent information structure divide that we see between, for example, topic and comment.
- (ii) The C/D domain in Bangla constitute a strong phase, such that a clausal complement must be parsed as a separate Intonational Phrase (Kidwai, 2011)

In the next two sections, I present a planar view of both the KA and RKA.

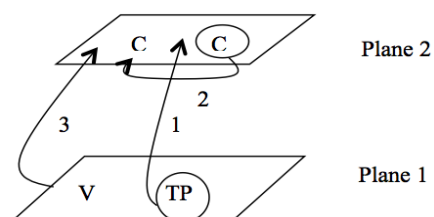
3.1 KA in a planar view

The conjecture above that the pre-VP positioning of the embedded clause is ‘monoclausal’ which can nonetheless be derived by KA or RKA by remnant movement (of VP/TP) leads to the possibility of treating KA as better represented by a planar view of clause structure. Note that the sequence of movements in the KA is as follows:

- (21) TP-movement > C-movement > (remnant) VP-movement

Given the assumption that C introduces a new plane, V+TP will create the first plane, but once the C is merged, the second plane is introduced. The two planes and the inter- and intra- planar movements are shown in (22) below:

- (22)



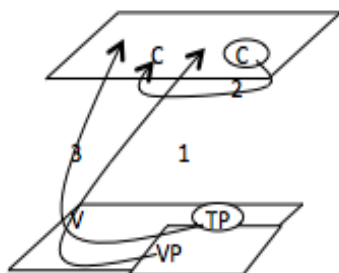
Note that movements 1 and 3 are interplanar; this is required for introducing or identifying a new plane (plane 2 here). Note that the new plane itself is available only after a higher functional head like C is introduced. If we consider the duality of semantics as an interface requirement, a biplanar structure is justified since it is the upper plane introduced by a typical discourse related head like C, that obtains discourse semantics.

Note also that IM and EM do not always correspond with inter- and intra- planar movements, respectively. The system is set up such that both interplanar and intraplanar movements obtain discourse related information structure (as in old information, topic-related information, or specificity). The inherent claim, which becomes clearer as we go through a set of derivations, relates information structure to how the planes behave. Note that the last movement, movement 3, achieves plane-incorporation; any precedence relation falls out as a result of the EF requirement of the embedding strong phase-head C. I would suggest that the set of movements here display an economy condition such as *VACATE MAXIMALLY*, which applies whenever possible. Plane-incorporation thus makes the structure in fact mono-planar; thus, a biclausal structure (1a) here is mono-planar. Furthermore, whenever plane-incorporation takes place, respecting *VACATE MAXIMALLY*, no special information structure obtains.

3.2 RKA: A Planar View

Recall that the revised KA suggested in section 2.1.3 makes an embedded VP move, followed by remnant movement of the TP. This is shown below in terms of the planar framework introduced above:

(23)



Note that in this derivation no plane-incorporation takes place, making this monoclausal structure (the pre-verbal complement positioning is being considered structurally monoclausal as in (2a)) bi-planar. The first movement is to weaken the TP to facilitate movement 3 later on; that is, the extraction of the VP out of the TP is to weaken the TP along its ‘crack’ so as to facilitate later separation of the V and the TP in the third movement step. The movement of the VP is reminiscent of Moro’s (1997) predicate raising analysis of copula sentences. Note here that the economy principle *VACATE MAXIMALLY* fails to apply, leading to non-incorporation of planes. This in turn implies that information structure becomes salient in such a configuration. Thus, we re-affirm that plane behaviour is responsible for information structure of a sentence rather than whether the movements are inter- or intra-planar, or whether they are IM or EM.

4 Matrix-COMP Clauses

Out of the two independent structures that are supposed to end themselves uniformly to a planar analysis, matrix-C clauses are another instance of C-internal clauses, albeit within a

simplex clause. Thus, apart from its usual function of being a clause-initial COMP in examples like (1a) (repeated here as (24)), *je* can also appear in matrix clauses (as in (24b)):

- (24) a. John jane [je ma aSbe]
 John knows C mother come.fut.3
John knows that mother will come.
- b. John hEmleT je poReche!
 John Hamlet C read.ppl.3

The obligatory exclamation mark in (24b) indicates that *je* sentences are easily acceptable when they are embedded clauses, but becomes much harder (and one needs special intonation) when they are in the matrix clause. I will suggest that this has to do with change being under way, from embedded clause C to matrix clause C. That is, *je* did indeed originate as a C in an embedded clause but it is now slowly undergoing reanalysis to be also available in the matrix clause. For the reanalysis to occur there must be a period where an embedded clause is interpreted as a matrix clause even though syntactically it is still an embedded clause. The suggestion here is that this is possible by deletion of the matrix clause.

Independently, we have seen that when the embedded clause *je* appears inside the complement clause while the clause itself raises to a pre-verbal position, a topic interpretation for the complement is obtained:

- (25) [mother je come-will] John knew
As for the fact that mother will come, John knew it.

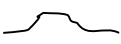
The meaning of (24b) is thus:

- (26) *As for reading Hamlet, John has already done it.*

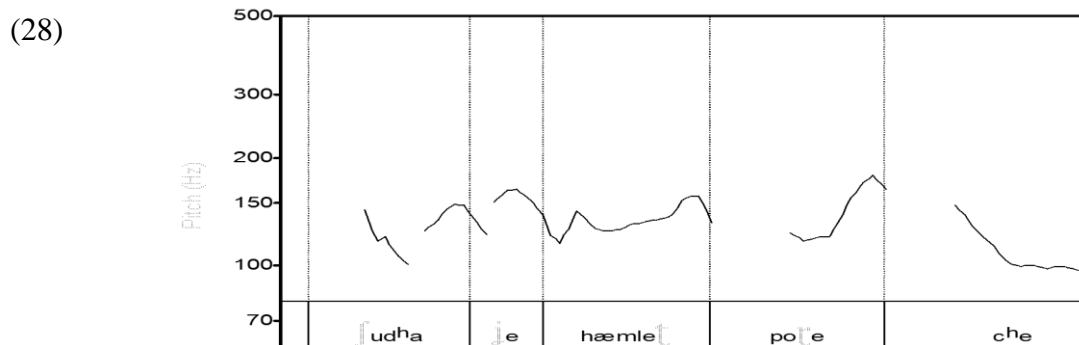
This supports the conjecture above that (24b) is an embedded clause in the guise of a matrix clause.

4.1 Prosody of Matrix-C clauses

In this section, I will present particular characteristics of these matrix-C clauses, which have not been seen as grammatically relevant constructions to date. Pitch studies of these strange root C clauses reveal an unusual contour, shown below:

- (27) 
 Sudha je hEmleT poReche
 Sudha C Hamlet read.ppl.3
'As for reading Hamlet, Shudha has already done it'
 ⇒ Hat contour over the verb

This can be seen even more clearly in the following pitch data:



In the pitch graph above, we notice very clearly the hat contour over the verb. The reason for this contour is conjectured above by stating that change being under way may result in deletion of the matrix clause from the biclausal structure. However, it remains to be seen how this deletion may be brought about. I will propose a rationale for this analysis in the following section.

4.2 Epistemicity

In this section, I will give an account of the possible reason for the matrix clause deletion phenomenon conjectured above. First consider the following data:

- (29) a. ami biSSaS kori (je) ora ebar jitbe
 I believe do C they this time win.fut.3
I believe that they will win this time.
- b. ?[ora ebar jitbe] ami biSSaS kori
 c. [ora je ebar jitbe] ami biSSaS kori
- (30) John je ghumocche!
 John C sleep.prog.3
(But) John is sleeping!

The data in (29a) and (29b, c) show that epistemic main clauses prefer a clause-internal C when the complement clause is in a pre-verbal position. The improvement of (29c) with a clause-internal C highlights the topicality of the EC. When conditions such as these are met, eventually the main clause simply drops out of the frame due to extreme epistemicity. As a consequence of pressure from the C-I interface, the main clause becomes entirely bleached of meaning, to the extent that it drops off the sentence frame. The erstwhile EC thus becomes the main clause. The C matrix clauses in Bangla are therefore like epistemic uses of parentheticals in English, where the subject of the EC, rather than that of the main clause, becomes the topic of the discourse:

- (31) a. It'll rain, I believe.
 b. John is asleep, I think. Underhill (1988)

Thompson and Mulac (1991) show that epistemic use correlates with the greater possibility of dropping *that*; correlation is most prominent if the following conditions are met:

- (i) 1st and 2nd person subject are more likely to be used with epistemic
- (ii) parentheticals, as they express the degree of speaker commitments more truthfully

- (iii) *think* and *guess* are the most frequent verbs that occur with epistemic expressions
- (iv) if the main verb occurs with auxiliaries it is more likely to retain the comp
- (v) main clause verb phrases with indirect object are more likely to retain *that*
- (vi) main verb with adverbs retain *that* more than ones without adverbs
- (vii) when the complement subject is a pronoun, *that* is more likely to be used than when it is not, since pronouns indicate high discourse topicality

The following table summarises their findings:

	- <i>that</i> (%)	+ <i>that</i> (%)	Bangla
person			*NSD
1 st	90	10	
2 nd	90	10	
3 rd	64	36	
main verb			NSD
<i>think</i>	91	9	
<i>guess</i>	99	1	
Other	76	24	
aux			✓
with aux	71	29	
without aux	88	12	
indirect object			✓
with indirect object	47	53	
without indirect object	87	13	
adverb			✓
with adverb	65	35	
without adverb	88	12	
subject of EC			NSD
Full NP	79	21	
Pronoun	89	11	

Figure 1

*NSD = No Significant Difference

The following example, which meets all the conditions for *that* retention, shows that C-deletion is not preferred:

- (32) John Sudhu mOdh-ke bolchilo *(je) du-To meye piknik-e
 John only Madhu-dat say.be.past.prog.3 C 2-cla girls picnic-loc
 jabe na
 go.fut neg
John was telling only Madhu that two girls won't go to the picnic.

Note that in (32), we see a 3rd person in the matrix clause; a main verb other than *think*, *guess*, etc.; an auxiliary; an indirect object; an adverb with the main verb; and finally, a full NP as a the EC subject.

An examination of the conditions for *that* deletion (which aid in epistemic meaning of the main clause) reveals that for Bangla, the potentiality of a legal pre-verbal fronting is also dependent on a combination of these factors. This is shown by the following where such fronting improves the grammaticality progressively:

- (33) a. Robin John-ke taRataRi boj hacchilo *(je) Mohon aj aSbe
 Robin John-dat quickly make understand C Mohon today come.fut.3
Robin was quickly making John understand that Mohan will come today.
- b. *Robin John-ke [Mohon aj aSbe] taRataRi boj hacchilo
 c. ?Robin John-ke [Mohon je aj aSbe] taRataRi boj hacchilo
 d. [Mohon je aj aSbe] Robin John-ke (Se-Ta) taRataRi boj hacchilo

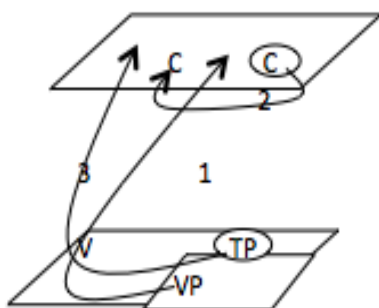
(33b) clearly shows that fronting of the EC without the C is impossible, but (c) and (d) show that the EC can sit in the pre-verbal position if it moves along with the C, with the latter being a non-initial position of the EC. The progressive nature of judgement across (c) and (d) show that as long as the C is re-analysed as occurring inside the EC, moving to the front of the clause is a natural phenomenon. I take this to be evidence in favour of an EC progressively showing main clause behaviour, albeit with the main clause being a part of the EC.

4.3 A Planar Account of C Matrix Clauses

In this section, I will show that a planar account of matrix-C clauses is superior in explaining how the C never gets deleted and is instead reanalysed as a part of the new matrix clause. This demonstration, in keeping with the demonstration of the planar account of the KA and RKA reaffirms the reinterpretation of what the sentential frame must be composed of, i.e., planes. Matrix-C clauses provide yet another strong support for this view of syntactic the frame.

Consider the structure (23), repeated here as (34):

(34)



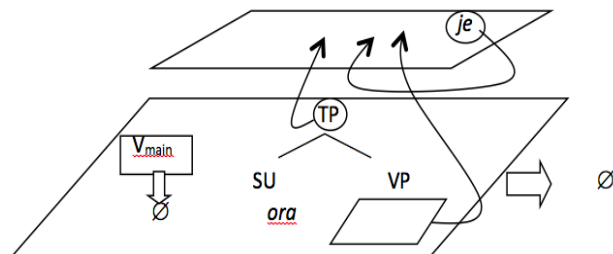
This structure, as noted above, does not involve plane-incorporation. However, we can now derive the matrix-C clauses from this structure without adding any extra mechanism. This is done by simply deleting the place hosting the matrix verb (and the matrix clause subject). This deletion, as discussed above, is facilitated by epistemic bleaching of the contents of the matrix clause. So although there is no plane-incorporation, there is now plane deletion, as VACATE MAXIMALLY applies.

This account has the additional advantage that we now have a ready explanation of why the C of the matrix clause is not deleted along with other material of that clause; C is simply introduced in a different plane (as independently required for other cases). Plane deletion also accounts for the peculiar intonation on the final verb.

Going back to (29), a planar view can now account for the preference for the complementizer *je* to appear clause internally when the complement is fronted. From the point of view of progressive movement to the front, and disappearance of the main clause under epistemic bleaching, we can consider the main predicate (being an epistemic one), *biSSaS kOra* 'to believe', to be deleted after VP-movement followed by TP-remnant

movement takes place. The consequence of interplanar movements of the VP and the remnant-TP, and the intraplanar raising of the C *je*, is felt at the lower plane respecting VACATE MAXIMALLY by deleting the epistemic predicate; the whole lower plane is, in effect, deleted. As in (34), plane deletion is planar representation of bleaching here too:

(35)



Considered from all perspectives, a planar view of matrix-C clauses makes immense sense in terms of capturing the embedded clause metamorphosing into a matrix clause – the presence of C is in fact the strongest evidence in favour of the reanalysis. However, the planar account makes the additional prediction that C survives in the upper plane, a plane introduced by that C itself. The discourse semantics obtained in the meaning of a matrix-C clause, as in (24b), is now captured adequately by realising the discourse plane (introduced by the C) to be the one into which the EC material from the lower plane incorporates.

5 Why a classifier in a copular sentence?

Having looked at one peculiar construction in Bangla and treated it through a planar account, let us consider the other construction that receives a unified treatment under the planar approach. It is sometimes easy to relegate the KA as purely a matter of the SM interface. However, I think there is more to it than routine PF matters. I hope to have demonstrated through the last few sections that the planar account of the KA gives us a superior account of C-internal and C-matrix clauses. In this section I hope to show that the answer posed by the question in the section title lies in a requirement of the C-I interface (that of breaking symmetry and maintaining the duality of semantics) that can be implemented better in a planar view of the KA. Thus, two disparate phenomena like C-internal clauses and copula-less nominal clauses are given a unified treatment by this model. This in turn raises the interesting possibility of whether the two are in fact disparate phenomena at all.

Consider first the fact that the following is ungrammatical in Bangla:

(36) *e boi
 this book
 This is a book.

This is so because we need an abstract representation, and the substantive part (an ‘equal to’ sign); that is, there should be some way to express the thought that *it* represents or stands for *book* but is not *book* itself. The copula in English does the job, but how does Bangla express the thought *This is a book*? Consider the following:

(37) e-Ta boi
 this-cla book
 This is a book.

We can ask, how (or why) is (37) possible? A general classifier *-Ta* (a nominal device) is used with the representation of the thing (*book*) to convey the same thought expressed by a copula in English or Hindi-Urdu. The situation is somewhat like the following:

- (38) a. *X = book* Intended message
 b. *is (X, book)* English, Hindi-Urdu; *X = it/ yah* ‘this’
 c. *X-def/spec book* Bangla

That is, English and Hindi-Urdu convey the intended message by inserting something between the two nouns (equivalent to an ‘equal to’ sign); Bangla instead achieves this by making one of them more definite or specific.

The interface question that I want to raise here is the following: Why is it the case that a language chooses to use a nominal element (a classifier) to complete a thought? The answer is not so simple. First, syntactically, the copula in Bangla equational sentences is dropped in the present tense. This is merely a syntactic observation, and does not approach the interface question at all. However, the observation, with regard to the requirement of a classifier to aid manifesting a thought, can be approached in a more minimalist manner. In particular, we could ask: (i) is it the case that the classifier is needed to express the distinction between the thing and its representation precisely because the *be* verb can be dropped in certain cases; or (ii) is it the case that the presence of the classifier triggers the deletion of the copula because they are both performing the same function? Given minimalist assumptions, both hypotheses seem quite likely. From the interface point of view, the narrow syntax (the computation to LF) readjusts to break to break the symmetry between the representing and the represented in response to the demand of the C-I interface by insertion of a copula (as in English and Hindi-Urdu) or a classifier (as in Bangla).

The two hypotheses stated in the previous paragraph make the situation complex. It is quite possible that since Bangla already has a well-developed system of classifiers, the system makes itself available for the purpose of ‘distinguishing’ X and Y in so-called equative constructions. On this view, the purpose of the equative is not to equate at all, but rather to rather show the dissimilarity between X and Y. Just because some well-studied language makes a deficient use of the construction by employing an equative copula, we have been primed to think that the purpose of the equative constructions is to show the equality between X and Y.

Given the planar of view of clauses, we are now in a position to hypothesise as follows: if Bangla is a more prominent ‘planar’ language, that is, it seizes the smallest opportunity to view clauses as planar, then it is likely that the moment there arises a possibility of introducing a new plane (for example, when our mind is dealing with two concepts X and Y), it does so. This is carried out by the classifier in so-called equative constructions. That is, the parametric difference between the languages boils down to the availability or lack of enough functional elements to carry out plane-realisation.

On this view, using the copula for an equative is the weaker strategy, and is employed only when the language does not have enough functional heads to carry out plane-realisation. On this view, (ii) (or the more accurate reformulated version below) is more likely to be case: (ii)’ Since classifiers are available to define or to make the noun more specific, the weaker strategy of ‘standing for’ constructions by using the copula is avoided. Thus, ‘break the symmetry’ as a C-I requirement is the most appropriate way of describing a so-called equative construction.

The following is inappropriate as the expression *this is a book*, precisely because it is merely an NP, and thus not a complete thought; it is not a thought chunk (TC) because no plane-introduction can take place as per the planar translation of the KA, since it is not an Event or State:

- (39) e boi-Ta
 this book-cla
 This book.

5.1 Copular Sentences

The minimalist observations raised in relation to the equative constructions above demand that we look at copular sentences in Bangla. Adopting the most popular view of copular sentences as a small clause complement of the predicate *be* (Stowell, 1978), shown in (41) is the structure for the copular sentence in (40). I suggest that if the *be* is unrealised, or is zero, then there is no way to break the symmetry between the elements of the SC (as demanded by the C-I interface). Something else must be introduced to break the symmetry, since if it too symmetrical it will lead to a derivation clash at C-I.

- (40) John ?(Ek-jon) lekhok
 John one-cla writer
 John is a writer.

- (41)
-
- ```

graph TD
 Root[] --- BE[BE]
 Root --- SC[SC]
 SC --- John[John]
 SC --- lekhok[lekhok]

```

If the copula head is filled (as in English and Hindi-Urdu), it breaks the symmetry by inducing raising; if it is empty, then we need to introduce another head (such as the phantom head *W*, as in the KA) in the form of CLA, FOC, or TOP (see Bhattacharya, (1999) for evidence of a Focus head inside the DP) to break the symmetry. One important consequence of this demonstration is that the phantom head introduction of Kayne is now seen as required by the C-I Interface. Thus, breaking of the symmetry is a structural manifestation of the C-I requirement that an NP by itself cannot be a TC; it would then be an illegitimate language-object at that interface. For it to be a minimal TC, it needs to merge a predicate, since *John lekhok* ‘John (is a) writer’ is a headless SC. A legal predicate head that can be merged with an SC is the copula *be* with an equative function. So we have a situation like the following:

- (42) {V [sc X Y]}  
       ∅

An empty predicate head cannot induce raising (either of the subject or the predicate of the SC) to break the SC-internal symmetry to become a TC. The C-I interface now dictates that for this derivation to proceed as a language object, the narrow syntax must employ a different strategy for breaking the symmetry:

- (43) [sc Y Y] → [sc Y+x Y] → (in effect) [sc X Y]

Thus the addition of something else can make the members of the SC dissimilar. I suggest that this ‘something else’ is specificity marking, which can be shown to follow the abstract head introduction in the KA. The triggers that drive movement from inside the SC can be found a minimalist explanation. I will suggest that the CLA is introduced at the Edge and an EF drives the raising of the SC-internal element.

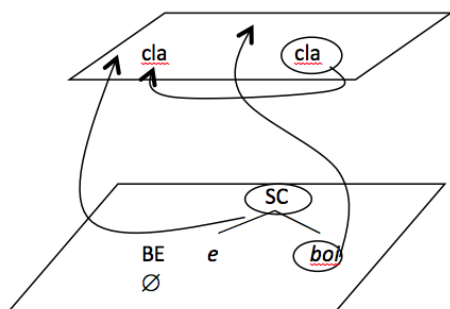
## 5.2 Breaking Symmetry in the Planar View

In this section, I will show that breaking symmetry can be shown to be plane-introduction. That is, the C-I requirement that the members of the SC should not be symmetrical is carried out by the CLA in Bangla, which nevertheless, on par with C in the earlier cases considered, introduces a new plane.

Consider the the copular sentence in (44) and its planar derivation in (45):

- (44) e-Ta    boi  
       this-cla book  
       *This is a book.*

(45)



As in the case of COMP, the functional element CLA introduces a new plane. The sequence of movements is as in the (R)KA: first the SC is weakened by vacating it, followed by F head raising which enables the remnant movement. Note that the set of movements is remarkably similar to earlier derivations, capturing in a way the strength of the planar framework. The lower plane is not deleted, although it follows the VACATE MAXIMALLY principle (unlike in the epistemic contexts as in Matrix-C clauses), due to the presence of null BE, which shows up in past and negative contexts:

- (46) a. e-Ta    boi    chilo  
       this-cla book be.past  
       *This was a book.*
- b. e-Ta    boi    nOY  
       this-cla book neg.be.prs  
       *This is not a book.*

This view will support the existence of expressions such as the following:

- (47) ei    je boi/ boi-Ta!  
       this    C book/ book-cla  
       *Here, (is) a/the book!*

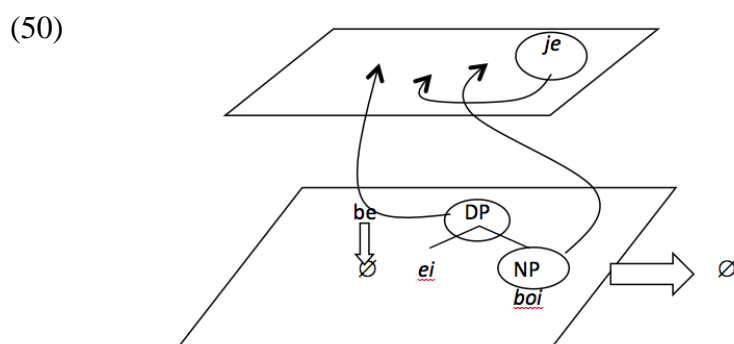
Since the noun *boi* ‘book’ here has a special status (almost like a proper name), it is not a ‘stands-for’ construction, and therefore no SC is generated; rather, a null *be* takes a DP as its complement. The CLA does not introduce a new plane as it comes pre-packed with the N (CLA here does not create a subject-predicate-like information structure divide, and therefore does not introduce a plane); *boi-Ta* comes as it is and no SC is assumed.



A discourse level C like *je* introduces a plane which triggers the movement from inside the DP followed by a remnant movement of the whole DP leaving the *be* plane eligible for deletion. These are essentially mono-planar structures and represent sentences underlyingly where the null *be* undergoes deletion. This is supported by the following impossibilities:

- (48) a. \*ei je boi chilo  
       this c book was
- b. \*ei je boi nOY  
       this c book neg
  
- (49) a. \*ei je boi-Ta chilo
- b. \*ei je boi-Ta nOY

Deletion of the *be* plane ensures that no AUX or NEG can actualise the empty *be*. One sample derivation is provided below (for (47)):

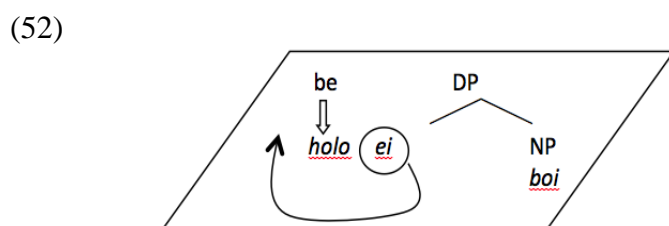


The set of displacements in (50) essentially follows the KA. The derivation employs a similar strategy as in the cases of C-internal and C-Matrix clauses, where the C introduces a new plane altogether. Additionally, the expression in (47) has yet again a strange intonation which is not expected or predicted if the movements are not inter-planar as shown; if plane-deletion does not take place, recall that the strange prosody of the matrix-C sentences was due to plane-deletion.

This account finds further support from the following SVO structures in both Bangla and Hindi-Urdu which exploit the actualisation of the *be* plane, which in fact happens to be the only possible plane in these sentences:

- (51) a. ei holo boi Bangla  
       this becomes book
- (i) *Here, this is what is called a book.*
- (ii) *Here, this is (your) book./ Here, take this/ the/ a book.*
  
- b. ye huii/ rahii kitaab Hindi-Urdu  
       this becomes.f.s book.f.s  
       (similar interpretations as in a.)

The derivation is as follows:



The intra-planar movement and the mono-planar structure for these SVO structures are supported by the following:

- (53) a. \*ei je holo boi  
           this c becomes book  
       b. \*ei holo boi-Ta  
           this becomes book-cla

In other words, in Bangla, a potential plane-introducing functional material like a C (*je*) or a CLA (*Ta*) is not legal with these expressions, showing that these are purely mono-planar structures.

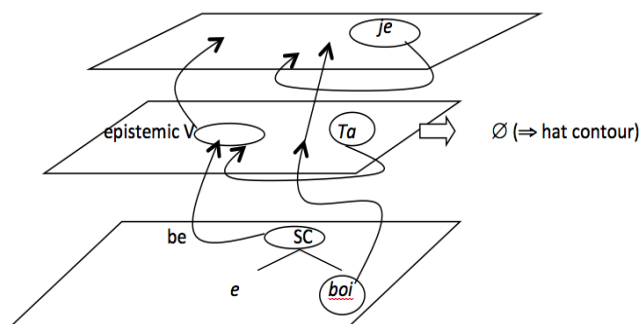
The expression in (54), however, is exactly like the matrix-C clauses with a multi-planar structure and an intonation reminiscent of the matrix-C clauses:

- (54) e-Ta je boi!  
       this-cla c book  
       *As for this, this is a book.*

A plane is deleted but the *be* plane is retained. The derivation is shown in (56):

- (55) a. e-Ta je boi chilo  
       this-cla c book was  
       *As for this, this was a book.*  
       b. e-Ta je boi nOY  
       this-cla c book neg.prs  
       *As for this, this is not a book.*

(56)



As in the case of matrix-C clauses, the epistemicity of the main clause is responsible for its ultimate demise (and the intonational contour), and for and re-emergence of the embedded clause as the only clause:

- (57) a. ami bhablam je e-Ta boi  
           I thought c this-cla book  
       b. \*ami bhablam je ei boi  $\emptyset_{be}$   
       c. \*ami bhablam je ei boi-Ta  $\emptyset_{be}$

Thus, given the similarity of intonation between matrix-C clauses and (54), if we were to reconstruct an earlier stage of the latter, it will still be grammatical (as in (57a)) but not for (47)). That is, the latter two (57b, c) could not have arisen as a result of matrix clause deletion

due to extreme epistemicity. Note also that the derivation in (56) accounts for the topic meaning that (54) obtains, namely, ‘As for X, ...’, through the introduction of the C-plane.

## 6 Conclusions

The plane-representation of the KA, C-internal clauses (the RKA), matrix-C clauses and nominal clauses above show that the embedded C in Bangla indeed is a strong phase head, requiring that clausal complements must be parsed as separate Intonational Phrases (Kidwai, 2011). The observation based on Guha (2011) that *je* in Bangla is a relativiser-turned-complementiser can be also transported into a plane-based account. However, Kidwai’s claim that the Bangla C<sup>0</sup> therefore requires a nominal in its specifier, in order to retain its strong phase character, is not so obvious in this model, since remnants have no particular property of being just nominal.

The plane-based model has certain obvious advantages over this. First, it accounts for the information structural differences that a C-internal clause obtains. Secondly, remnant movement accounts for non-constituency of all that finally appears to the left of the C. In addition, it has a natural way of providing a uniform account of C-internal, matrix-C and nominal clauses. Finally, the plane-based model can easily be extended to the following case (where the clause-internal C is embedded deeper, appearing after the object inside the EC), by opting for local, intra-planar object movement to satisfy C’s discourse properties (obtaining cleft focus semantics for the shifted object) followed by remnant movement of the TP as in the derivation (23) (for RKA) above:

- (58) [kal-rat-e ma phOl je kheyechen] Sudha jane  
 Last-night-loc mother fruit C eaten.hon Sudha knows.3  
*As for the fact that it was fruit that mother ate last night, Sudha knows.*

The fact that this requires no additional mechanism to be derived supports the planar view of clauses in general. Furthermore, no special head needs to be posited to account for the focus driven object shift in this example; the focus-semantics is determined simply as a property of the type of inter-planar movement in the upper, discourse related plane of the clause.

## References

- Bayer, J. (1984). COMP in Bavarian syntax. *The Linguistic Review*, 3, 209—274.  
 Bhattacharya, T. (1999). The Structure of the Bangla DP. (Doctoral dissertation, UCL).  
 Bhattacharya, T. (2001). The Puzzle of Bangla Comp-Internal Clauses. *Snippets*, 3, Universite di Urbino.  
 Bhattacharya, T. (2002). Peripheral and Clause-internal Complementizers in Bangla: A Case for Remnant Movement. In V. Samiian (ed.), *Proceedings of Western Conference in Linguistics 2000* (pp. 100—112), CA: Fresno.  
 Bhattacharya, T. (2008). Focus accent in Bangla complex sentences, *Interdisciplinary Journal of Linguistics*, 1, 13—24. Srinagar: University of Kashmir.  
 Chomsky, N. (1995a). Bare phrase structure. In G. Webelhuth (ed.), *Government and Binding theory and the Minimalist Program*. Cambridge, MA: Blackwell. 383—439  
 Chomsky, N. (2005). Three factors in language design. *Linguistic Inquiry* 36(1), 1—22.  
 Chomsky, N. (2006). On phases. In R. Freidin, C. Otero, & M. Zubizarreta (eds.), *Foundational Issues in Linguistic Theory*. Cambridge, MA: MIT Press.  
 Guha, I. (2011). Leftward movement of a finite complement in Bangla and resumption. Talk given at LISSIM 5.  
 Kayne, R. S. (1998a). Overt vs. covert movement. *Syntax*, 1, 128—191.

- Kayne, R. S. (1998b). A note on prepositions and complementizers. *Internet Celebration for Noam Chomsky's 70<sup>th</sup> Birthday*. Cambridge, MA: MIT Press.
- Kayne, R. S. (1999). Prepositional complementizers as attractors. *Probus*, 11, 39—73.
- Kidwai, A. (2011). Cutting edge(s): Clausal complements, extraposition, and wh-movement in Hindi and Bangla. *Asian Glow* 9, Nanzan.
- Moro, A. (1997). *The Raising of Predicates*. Cambridge: Cambridge University Press.
- Thompson, S. A. and M. Anthony. (1991). The discourse conditions for the use of the complementizer *that* in conversational English. *Journal of Pragmatics*, 15, 237—251.
- Stowell, T. (1978). What was there before there was there. In D. Farkas, W. M. Jacobson & K. W. Todrys (eds.), *Papers from the 14<sup>th</sup> Regional Meeting of the Chicago Linguistics Society*. Chicago, IL: University of Chicago.
- Underhill, R. (1988). The discourse condition of *that* deletion. Ms. San Diego University.