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FOCUS ACCENT IN BANGLA COMPLEX SENTENCES[1]

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Introduction

This paper lays out the foundation for the claim that focus accents are interpreted at the interface levels. As in English (and German and many other languages), focus accents in Bangla influence the prosodic phrasing and the pitch contour of the sentence – matters that are mostly dealt with at the A-P (Articulatory Perceptual) interface (Chomsky 1995). That the focused constituent in Bangla attracts P-phrase breaks has been argued for by Hayes and Lahiri (1991) and will not be taken up in this study. At the C-I (Conceptual Intentional) interface, however, focus accents have effects on the appropriateness of the containing sentences -- a matter to be investigated with tools that this paper attempts to provide for.

An attempt is made to revisit the Question-Answer model of discourse proposed first in Roberts (1996) and refined by Büring (1998) in light of data from complex sentences in Bangla which shows the presence of two pitch accents. A straightforward hierarchy of super- and sub-questions, assumed in this model, seems inadequate for such cases since the subordinate complement clause within these complex sentences signifies a world of its own – a different super-Q. The syntactic reflex of this is sought in the demonstration that the level of embedding of questions in a Q-A hierarchy reflect the number of syntactic movements (and therefore the number of features) involved in the derivation. Such a revision allows for the p-word under focus to appear as an answer to both a sub-super-Q and a sub-Q, justifying both the revision in the model attempted and the observation that a greater prosodic activity is noticed for the p-word under scrutiny.

Question-Answer based model of discourse (Roberts 1996)

The basis of this model of discourse takes into account the information structure status of the context under which a certain utterance is felicitous. The leading idea in brief is that the structure of discourse is organized by Questions, Answers, and their hierarchical relationships. Most semantic theories regard a

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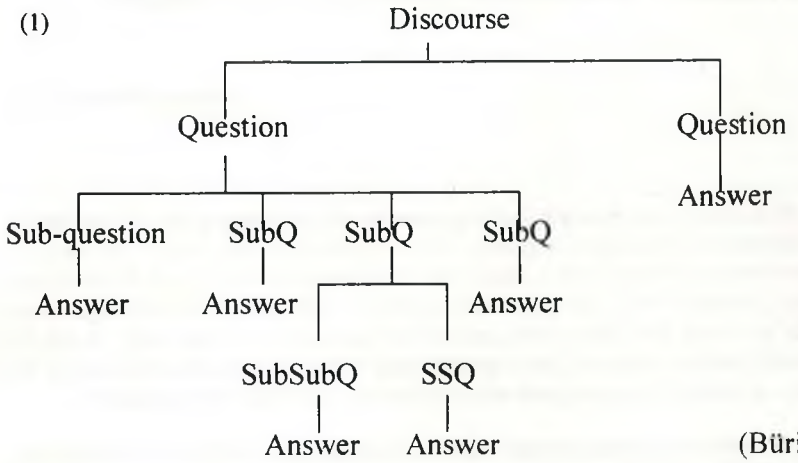
question as denoting the set of propositions which are the possible answers to the question. Any assertion answers an implicit/ explicit Q called the Question Under Discussion (QUD). Discourse, in this model, then translates into a *strategy of enquiry* – a sequence of questions and their answers which move towards the aim of answering the "big" question, the super-Q. A sub-tree rooted in a question Q is a *strategy to answer* Q. A strategy can thus be a plain answer, or a sequence of sub-questions with their answers, and so on. This state of affairs is roughly represented in the tree in(1).

(1)



(Büring 1998)

Two Accents in English

This phenomenon is most famously exhibited by example in(2) Jackendoff (1972).

(2) Fred ate the beans.

(3) a. What about Fred? What did he eat?
b. $[\text{Fred}]_B$ ate $[\textbf{beans}]_A$

(4) a. What about beans? Who ate them?
b. $[\textbf{Fred}]_A$ ate $[\text{beans}]_B$

(Jackendoff 1972)

That is (2) must be pronounced differently if it is an answer to (3a) than if it is an answer to (4a). Following Bolinger (1965), Jackendoff calls the accent on *beans* in(3b) and on *Fred* in (4b) as the A-accent. The secondary accent on *Fred* in (3b) and *beans* in (4b) is called the B-accent which really marks the Background. The questions and accents cannot be interchanged, i.e., (4b), for example, cannot be used as an answer to the question in (3 a). The accents and their modern equivalents are summarized in the table below.

	Jackendoff (1972) after Bolinger (1965)	Pierrehumbert (1980)
A-Accent	Dependent focus	H* L L%
B-Accent	Independent focus	H* L H%

Table 1: Comparison of "two" accents in English

Revisiting A- and B-accents

Revisiting A- and B-accents

Now let us see how Roberts' (1996) model deals with this famous two-accent phenomenon. She shows that by virtue of identical placement of prosodic focus in both the answers in (3) and (4), they presuppose a QUD or the Super-Q as in (5), i.e., the question *Who ate what?*. However, the location of the L-H boundary sequence indicates the presence of a (latent) sub-question. Since the boundary sequences are located differently, the sub-questions are also different, (5a) and (5b) respectively. (5a') and (5b') show how the strategies of enquiries differ for each of the utterance.

(5) SuperQ: Who ate what?

a. $SubQ_1$: What did $[Fred]_F$ eat?

a'. $SubA_1$: $[Fred]_B$ ate $[\textbf{beans}]_A$ **BA**

b. $SubQ_2$: Who ate $[beans]_F$?

b'. $SubA_2$: $[\textbf{Fred}]_A$ ate $[beans]_B$ **AB**

(5a') presupposes the strategy of enquiry <(5), {<(5a),∅>}>
(5b') presupposes the strategy of enquiry <(5), {<(5b), ∅>}>

Notice that the B-accent refers back to a Super-Q whereas A-accent refers to a Sub-Q. By following Büring (1998) and keeping the Bangla data to be presented in view, the A-accent will be referred to as the F-accent and the B-accent as the T-accent.

The two-accent phenomenon and its relation to a "multi-layered" discourse are also demonstrated by the strategy in (7). Kanerva and Gabriele (1996) show that the utterance in (6) is really embedded in the larger discourse context where the speaker is planning a trip to take a child to a friend's house and go with his spouse to the grocery store. The speaker, in this context, is concerned with how to arrange the driving route, the strategy in(7) is indicative of this planning.

(6) In fact, I can drop $[\textbf{you}]_1$ off $[first]_2$
(7) a. SuperQ: Who can I drop off in what order?
b. SubQ: Who can I drop off first?
c. Answer: I can drop you off first (Kanerva and Gabriele 1996)

The relative prominence of the two accents is determined from the focus layers: in(7) *you* is focused in two layers (Super- and Sub-Q levels), *first* in one layer (SuperQ).

The Basic Data

In Bhattacharya (2001a,b), the basic data as in(8) and(9) is brought to light. The puzzle involving the inversion of word order noticed in the case of(8) is discussed in light of an extended Kaynean model (Kayne 1998a,b, 1999). Needless to add, in accordance with much earlier/ later work as in Bhattacharya (1998 et seq) and Simpson and Bhattacharya (2000, 2003), the analysis assumes a head medial basic structure for Bangla. Now let us look the basic data.

(8)JOn [ma **je** phOl kheyeche] jane **TOPIC**

John [mother that fruit eaten] knows

'As for the fact that mother has eaten fruits, John knew it'

(9) JOn jane [**je** ma kal aSbe] **CANONICAL**

John knows [that mother tomorrow come.will]

'John knows that mother will come tomorrow'

The two things that must be noted with respect to the marked order as in(8) are: the complement clause is in pre-verbal position and the complementizer is clause-internal. This is captured in the categorial representation as in (10).

(10) a. V + *[$_{CP}$ ...C...]

b. *[$_{CP}$ C...] + V

That is, if the complement were to remain in the canonical, post-verbal position then the C cannot be clause-internal (10a) and that if the complement is in a pre-verbal position then the C cannot be in the clause-initial position (10b).

A new paradigm

For this paper, I wish to add a twist to the tale in the form of data such as(11) where it can be noted that much like(8) the complement is in a pre-verbal position. In addition, not only is the complementizer in a clause-internal position (as in (8)) but is shifted further deep (to the right) inside the clause.

(11) Mohon [Sudha phOl **je** kheyeche] janto **FOCUS**

Mohon Shudha fruit that eaten.3 knew.3

'As for the fact that *it was fruits* that Shudha ate, Mohon knew it'

Let us call complex sentences of this type as focus sentences. The word order in this type of sentences indicates a further inversion of the object 'fruit' over the complementizer. Without going into details, it may be pointed out here that the earlier analysis cannot handle focus sentences of this type. We may therefore have to revise the earlier extended model. Before any such attempt is made, the claim that these sentences involve a focus accent must be examined.

Evidence for focus reading

There are basically two types of evidence for the focus accent: (i) evidence from intonation, and (ii) empirical evidence.

Intonation

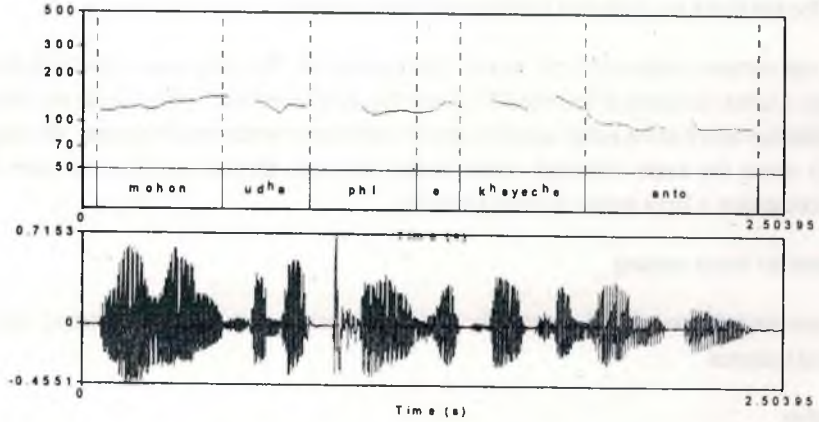
The evidence from intonation constitutes speech analysis of two pilot studies with native speakers involving both isolated sentences and non-isolated, context-driven reading tasks containing the test sentences. The data was digitally recorded on a Sony Minidisk recorder and analysed with Praat.

First, if we look at the pitch accent on *je* in(12), we notice that there is a special pitch accent associated with the marked case. If we consider the *phOl je* as a single p-word for the purpose of accent determination, then the presence of a boundary rise is noticed for the marked case of the focused sentence in(12).

In fact, it can be further inferred that the pitch contour on this p-word is really L* H_p, with L* tone on the main stress of the sentence, *phOl*. This observation is repeated in the case of(13) where additional material in the form of an adverbial phrase appears to the left of the complementizer. The last observation relates to the subject *Sudha* of the complement clause in both (12) and (13).

(12)	Mohon	[Sudha	phOl	**je**	kheyeche]	janto
	Mohon	Shudha	fruit	that	eaten.3	knew.3

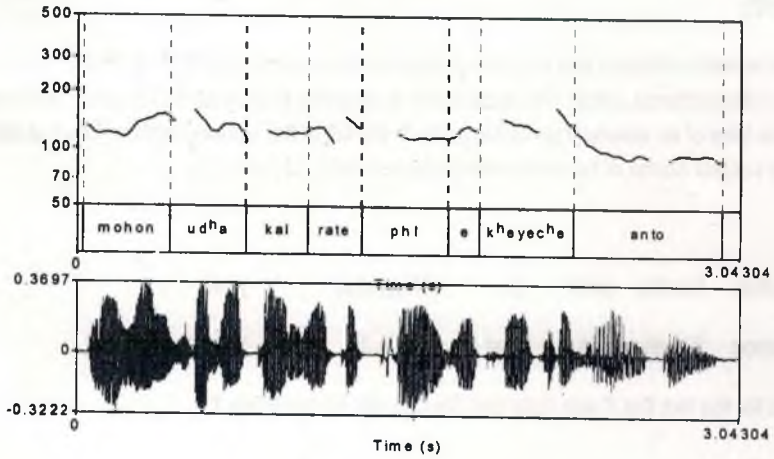
'As for the fact that *it was fruits* that Shudha ate, Mohon knew it'



(13) Mohon [sudha kal rate phOl je kheyeche] janto

Mohon Shudha last night.LOC fruit that eaten.3 knew.3

'As for the fact that it was fruits that Shudha ate last night, Mohon knew it'



The observations are repeated as in (14).

(14) Conclusions

- Greater intensity in speech signal for p-word *phOl*
- Longer duration of focused word
- Pitch contour L* H_P for the focused word, lack of H_P for initial C
- Lack of H_P phrase tone with non-focused subject

Based on other views on related matters as in (15), I adopt the terminology shown in (16).

(15) Typical focus contour for Bangla is L* H_P (Lahiri and Fritzpatrick-Cole 1999)

H_P of the focused word acts as a focus marker (Hayes & Lahiri 1991)

Deaccenting typically shows sharing of background (Gussenhoven 1984)

(16) Terminology adopted

- L* H_P on the focused p-word as F-Accent
- Accent on the subject as T-Accent

Empirical

The data in (17) suggest that if we test the contrastive focus on the main sentence by changing one grammatical function at a time (subject or object of the complement clause) in the continuation part, then we see that the focus sentences of the type under discussion do not allow a contrastive focus on the subject of the complement. That is, in (17a) the subject of the complement clause of the main sentence, *Sudha*, cannot be contrasted but the object (*phOl*) can be.

(17) a.* Mohon [Sudha phOl je kheyeche] janto, rOma je kheyeche janto na
Mohon Shudha fruit that eaten.3 knew Roma that eaten.3 knew NEG

'As for the fact that *it was fruits* that Shudha ate, Mohon knew it but he didn't know

that Roma ate them'

b. Mohon [Sudha phOl je kheyeche] janto, bhat je kheyeche janto na

Mohon Shudha fruit that eaten.3 knew rice that eaten.3 knew NEG

'As for the fact that *it was fruits* that Shudha ate, Mohon knew it but he didn't know

that she ate rice'

This observation is strengthened by the data in (18) which differs from the preceding example minimally by using the emphatic particle *–o* with the test contrast element in the continuation part. We observe that, even with this additional device, subject (of the complement clause) contrast in such cases is not allowed.

(18) a.* Mohon [Sudha phOl je kheyeche] janto, rOma-**o** je kheyeche janto na

Mohon Shudha fruit that eaten.3 knew Roma-EMP that eaten.3 knew NEG

'As for the fact that *it was fruits* that Shudha ate, Mohon knew it but he didn't know

that Roma *too* ate them'

b. Mohon [Sudha phOl je kheyeche] janto, bhat-**o** je kheyeche janto na

Mohon Shudha fruit that eaten.3 knew rice-EMP eaten.3 knew NEG

'As for the fact that *it was fruits* that Shudha ate, Mohon knew it but he didn't know that she ate rice *too*'

In short, the conclusion is as repeated below(18b).

> *Subject of the complement cannot be contrasted (with or without an EMP marker) but the object of the complement can be contrasted*

Similar results obtain for VP focus (see Bhattacharya 2002 for details) where it is concluded that the whole complement CP cannot be under focus and VP is the maximal projection that can be focused. We conclude from this section that there is enough empirical evidence to show that in terms of meaning, sentences identified here as focus sentences do indeed contain a focused word within the complement sentence. Also, the subjects of these complemented clauses are not focused.

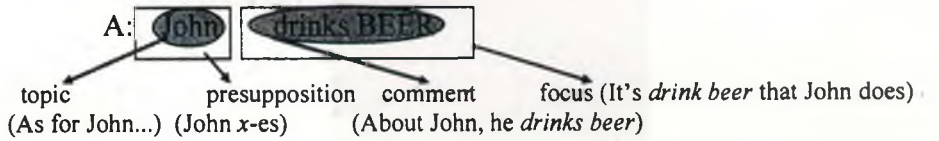
This observation now matches with the results obtained from the intonation evidence. It was shown that the subject carries a T-accent (therefore cannot be focused) while the word preceding the complementizer (the object in most examples) carries the F-accent (therefore can be focused). However, we still need to account for the VP contrast mentioned briefly in the preceding paragraph. This is done in the following section by bringing into the picture *Information Packaging Theory* of Vallduví (1992).

Information Packaging Theory (IPT)

IPT claims that there is a third element besides topic and focus. Let us see how this works. The two accent phenomenon in English discussed earlier is put to use again within the IPT model. The example in (19) shows that topic and comment matches pretty nicely with presupposition and focus respectively. The rectangles indicate focus and presupposition whereas the shaded shapes indicate topic and comment.

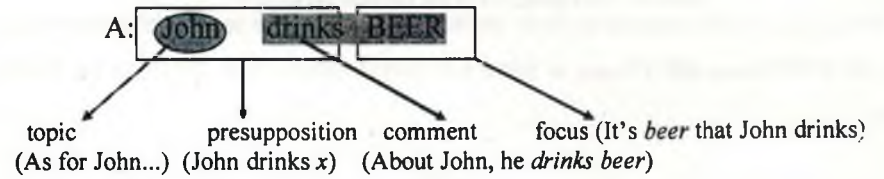
Conflation of topic-comment with focus-presupposition

(19) Q: What about John, what does he do?



However, this is not the case in the case of (20) where there is a mismatch.

(20) Q: What about John, what does he drink?

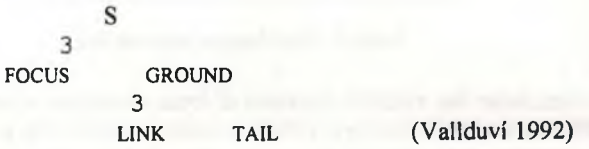


So, according to IPT, we need a three-way division as in indicated in the box under (20)

FOCUS	TOPIC	??

The identity of the ?? is provided by IPT in terms of the Information-packaging primitives as in(21) which divides a sentence into focus and ground and then ground further into link and tail.

(21)



(Vallduví 1992)

(19) and (20) are now re-labelled as:

(22) a. [GROUND [LINK John]] [FOCUS drinks BEER]
b. [GROUND [LINK John] drinks] [FOCUS BEER]

In IPT terms, A-accent is focus related and B-accent is Link related. Now let us try to map a very simplified clausal structure onto the IPT primitives as Table 2 . It is clear from this mapping that the VP of the clausal structure lacks a corresponding information packing status.

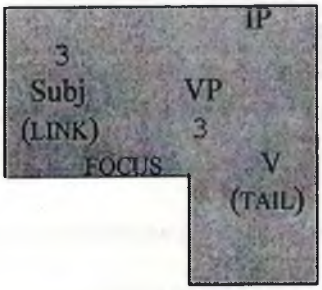


Table 2: Mapping(21) with clausal structure

I would like to claim, that for whatever its worth, the feature GROUND can be seen to demarcate two sub-features, call them IP_{GROUND} and VP_{GROUND}, or some such similar feature. Thus, we obtain the following hierarchy:

(23) Hierarchy within GROUND → IP_{GROUND}, → VP_{GROUND}

This now leads to the final feature association as follows:

[focus]	=	F-accent
$[IP_{GROUND}]$	=	T– accent
$[VP_{GROUND}]$	=	VP_{FOC}

Table 3: Final feature association

These three features derive the syntactic derivation of focus sentences in Bangla following a revised Kaynean algorithm defended in Bhattacharya (2002). In terms of prosody, this implies that although the T- and F-accents are implemented in the A-P interface the VP_{FOC} accent/ meaning is derivable only through a consideration of the C-I (or related pragmatic) interface. Due to the multiple spell-out nature of syntactic computation assumed in this study, information from these interfaces must continually feed the narrow syntactic computation. I avoid the details here in this presentation. Finally, in view of the preceding findings, the Q-A model that we started with must be revised along the following lines.

Extension of the Q-A model

Neither Roberts (1996) nor Büring (1998) consider complex sentences for their model of discourse. Due to the complex nature of the sentences studied here, a straightforward application of the Q-A model is not sufficient to derive the full implications of the focus accent at the C-I interface. The proposal made in this paper is that an embedded clause is a different entity, it introduces a new world with truth values of its own. I will claim that the embedded clause also introduces a Super-Q called the *Sub-Super*-Q. This claim is based on the observation in(24).

(24)An embedded clause introduces a new proposition, connected by the Complementizer, Congruence within the embedded clause cannot otherwise be worked out

Based on this claim, let us see, how does the strategy of enquiry look like for a typical example sentence like *Mohon knew that Shudha ate fruits*. The strategy is shown in(25) where the complement is shown frozen in (25e) since at that stage of the strategy, its truth value is of no interest.

(25) a. Super-Q: Who knew what?

b. SubSuper-Q: Who ate what?

c. Sub-Q: What did Shudha eat?

d. Answer: Shudha ate **fruits**

e. Super-A: Mohon [Sudha fruit ate] knew

It is now easy to infer that in (25d) *fruits* appears in two layers as an answer to Sub-Sup-Q and to Sub-Q, whereas *Shudha* appears as an answer to the Sub-Super-Q only. This leads to the conclusion that *fruits* receives the heavier A-(or F-)accent since it refers back to two questions in the strategy whereas *Shudha* receives the weaker B-(or T-)accent since it refers back to only one question in the strategy.

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