

## Obligatory Additive Particle on Negation

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### 1. Introduction

In Bangla, the negated complement of the existential modal predicate *par-* (in epistemic and in deontic readings) shows an obligatory additive particle ‘-o’.

Epistemic use of the modal:

- (1) Ritu ækhon baṛi-te na-#(o) thak-te pare  
Ritu now home-loc neg-O stay-inf may.pres.3  
‘It is possible that Ritu is not at home now.’ [may > neg]  
#‘It is not possible that Ritu is at home now.’ [# neg > may]
- (2) Ritu ækhon baṛi-te na thak-te-#(o) pare  
Ritu now home-loc neg stay-inf may.pres.3  
‘It is possible that Ritu is not at home now.’

While (2) is more general, (1) is particularly used for polarity contrast. I would concentrate on analyzing (1) in this squib.

Deontic use of the modal:

- (3) tumi ice-cream-ṭa na-#(o) khe-te paro  
you ice-cream-cla. neg-O eat-inf may.pres.2  
‘You are allowed to not eat the ice-cream.’

The paper tries to understand this particular instance of obligatoriness of the Additive particle.

### 2. Background

#### 2.1 Background on Negation in Bangla

The position of sentential negation in Bangla usually depends on the presence or absence of the Tense inflection on the verb. The negation follows a verb form that is marked with

Tense ((4) below) while it precedes a verb form lacking Tense inflection in embedded clauses (see Simpson and Surov (2014)). The protasis of conditional provides an exception to this distribution, as in this clause, the negation occurs before a verb form marked with Tense (see Ramchand (2014) for an analysis). For the purposes of this paper it is important to note that only the negation in pre-verbal position can host an Additive particle (or any emphatic clitic). Moreover, even among pre-verbal negation, the appearance of the Additive particle is limited to only two constructions: the cases illustrated in (1) through (3) and in Concessive conditionals. I refrain from discussing Concessive Conditionals in this paper for the sake of brevity.

In examples (1) through (3), the existential modal has scope over negation. To get the negation over modal reading, the negation has to be placed after the modal. Example (4) with post-verbal negation on the matrix modal predicate *pare* represents the negation over modal reading.

- (4) Ritu ækhon bari-te thak-te pare **na**  
 Ritu now home-loc stay-inf may.pres.3 neg  
 ‘It is not possible that Ritu is at home now.’ [neg > may]  
 #It is possible that Ritu is not at home now. [# may > neg]

## 2.2 Background on the Additive Particle

The Additive Particle *-o* is one of the two ‘emphatic’ clitics in the language. Bayer and Lahiri (1990) (among others) discusses the distribution of the particle and gives a syntactic account of its scope. The particle *-o* triggers an Additive presupposition about its Associate, which is often the constituent the particle cliticizes to.<sup>1</sup> The following examples illustrate the variation in meaning resulting from the different positions of *-o* in simple sentences.

On Subject:

Context: Manoj came to the party last night, and...

- (5) Robi-**o** eSechilo.  
 Robi-O came.3  
 ‘[Robi]<sub>F</sub> came too.’

The sentence asserts *that Robi came* and the *-o* on *Robi* gives rise to the presupposition *that somebody other than Robi came*.

The presence of *-o* on the subject triggers alternatives of the sentence, which are of the form [came(x): x ∈ D<sub>e</sub>] and the particle is anaphoric to atleast one such alternative salient in the context.

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<sup>1</sup> The particle can also mean ‘even’ in appropriate contexts. It is a close parallel of Hindi *-bhii* as discussed in Lahiri (1998).

## Obligatory Additive Particle on Negation

On Object:

Context: Robi read the magazine, and...

- (6) Robi boi-**ta-o** poṛeche  
Robi book-cla-O read.3  
'Robi read [the book]<sub>F</sub> as well.'

The sentence asserts *that Robi has read the book* and the *-o* on *book* gives rise to the presupposition *that other than the book there is something else that Robi has read*.

With *-o* on the object in the given context, we are considering alternatives of the form [read(r, x): x ∈ D<sub>e</sub>].

On Intransitive verb:

Context: Robi has done the assignment, he went to the party, and...

- (7) Robi ghumiye-**o**-che  
Robi sleep.pfv-O-asp.pres.3  
'Robi has [slept]<sub>F</sub> as well.'

The sentence asserts *that Robi has slept* and the *-o* on *slept* gives rise to the presupposition *that other than sleeping, Robi has done something else* (i.e., *some other predicate is true of Robi*).

The additive particle marks alternatives of the form [R(r): R ∈ D<sub><et></sub>]

On a Transitive verb:

- (8) Robi boi-**ta** poṛe-**o**-che  
Robi book-cla read-pfv-O-pfv-pres.3  
'Robi has [read]<sub>F</sub> the book as well.'

In (8), *-o* attaches to the verb, triggering relevant alternatives of the form [R(r, the book): R ∈ D<sub><e,et></sub>]. The construction is usable in contexts where there is an antecedent that entails that Robi did something else with the book. For example,

- (9) Robi Sudhu boi-Ta kene-i-ni, Robi boi-Ta **poṛe-o-che**.  
Robi only book-cla buy.pfv-I-neg-pfv, Robi book-cla read.pfv-O-asp.pres.3  
'Robi not only [bought] the book, he [read]<sub>F</sub> it as well.'

In the cases above (5 to 9), *-o* clearly marks the constituent which has to be replaced with elements of the same type, to obtain the focus value of the sentence. Being an additive particle it presupposes that one of the (contextual) alternatives of the sentence is true.

There are constructions in which the constituent that is *-o* marked and the constituent that is actually focused do not match. The clearest example at hand is a construction like (6) above, except used in a different context.

On Object:

Context: Robi watered the plants and...

- (10) ... o            boi-ṭa-**o**    poreche  
                       pron.3    book-cla-O read.3  
                       ‘...he read the book as well.’

In (10), the Additive presupposition is *that Robi did something else, other than reading the book*. Therefore, even though *-o* appears on the object, the entire VP is focused, as is fitting to the context, and consequently, the relevant alternatives of the sentence are of the form  $[R(r) : R \in D_{\langle \text{et} \rangle}]$ .

Considering just these cases, it seems the occurrence of *-o* is like an F-marker with usual F-projection properties.<sup>2</sup> It can be shown that *-o* behaves like the additive operator as well (Guha 2016ms.).

### 3. Additive particle on negation

#### 3.1. The meaning of the construction

Assuming the Additive attribute of *-o*, the meaning of sentence (1) would be:

- (1)     Ritu ækhon    bari-te        **na-#(o)** thak-te    pare  
          Ritu now     home-loc    neg-O    stay-inf    may.pres.3  
          ‘It is possible that Ritu is not at home now.’
- a.     Assertion: It is possible that Ritu is not at home now.  
       b.     Presupposition: It is possible that Ritu is at home now.

So in effect, uttering (1) in Bangla amounts to uttering *it is also possible that Ritu is not at home now* in English.

Interestingly, the following sentence shows that this intuition is on the right track. Consider:

- (11)    Ritu ækhon    bari-te        **na-#(o)** thak-te    pare        **na**<sup>3</sup>  
          Ritu now     home-loc    neg-O    stay-inf    may.pres.3 neg  
          ‘It is not possible that Ritu is not at home now.’

Here *-o* cannot appear on the embedded negation, because if it did it would lead to a contradictory Additive presupposition as predicted by the meaning above. Let us see the meanings of the infelicitous version of (11), which is (12) with *na-o* in the embedded clause.

<sup>2</sup> *-o* does not appear on attributive adjectives (\*[A-o NP]), or on nouns inside postpositional phrases (\*[NP-o P]), and the idea of *-o* being an F-marker would require further qualifications for such cases. (see Bayer and Lahiri (1990), for a syntactic proposal)

<sup>3</sup> A metalinguistic use of the matrix negation might make the construction acceptable with *-o*.

## Obligatory Additive Particle on Negation

- (12) #Ritu ækhon baṛi-te **na-o** thak-te pare **na**  
Ritu now home-loc neg-O stay-inf may neg

- a. Assertion: It is not possible that Ritu is not at home now.  
b. Additive presupposition: It is not possible that Ritu is at home now.

Clearly (12a) and (12b) are contradictory. Within the same domain of worlds, Ritu has to either be at home or not be at home. Both of these cannot be ‘not possible’ (impossible) as the assertion and the presupposition would yield. That is why the use of *-o* in this sentence is infelicitous.

### 3.2. The affirmative complement of *par-*

In contrast with the negative complement that we have discussed so far, the affirmative complement of the existential modal predicate *par-* does not appear with an obligatory additive particle.

- (13) Ritu ækhon baṛi-te thak-te-(**o**) pare  
Ritu now home-loc stay-inf-(O) may.pres.3  
‘It is possible that Ritu is at home now.’

### 3.3. Context dependency

A brief survey reveals that the obligatoriness of *-o* in the complement of the existential modal is dependent on the context. When the antecedent entails that *it is possible that Ritu is at home now*, the utterance must contain the additive particle in the negative complement.

Scenario 1:

- A: Ami Ritur baṛi jacchi. O Sadharonoto ækhon baṛitei thake.  
‘I am going to Ritu’s place. She is usually at home now.’

B: Right, but

- (14) Ritu ækhon baṛi-te **na-#(o)** thak-te pare  
Ritu now home-loc neg-O stay-inf may.pres.3  
‘It is also possible that Ritu is not at home now.’

In Scenario 1, A’s utterance entails the proposition *it is possible that Ritu is at home now*, which is also what B’s utterance (14) presupposes by the particle *-o*.

On the other hand, when the antecedent entails *it is possible that Ritu is not at home now*, the utterance must contain the additive particle in the affirmative complement.

Scenario 2:

- A: Ritu Sadharonoto ækhon baṛi-te thakena.  
‘Ritu is usually not at home at this hour.’

- B: Right, but,  
 (15) Ritu ækhon baṛi-te thak-te-#(o) pare  
 Ritu now home-loc stay-inf-O may.pres.3  
 ‘It is also possible that Ritu is at home now.’

In Scenario 2, A’s utterance entails the proposition *it is possible that Ritu is not at home now*, which is also what B’s utterance (15) presupposes by the particle *–o*.

To summarize, when the context takes it for granted that [  $\diamond p$  ], and the speaker wants to assert that [  $\diamond (\neg p)$  ], the additive particle has to be used to refer to the presupposed possibility. Similarly, in a context that takes [  $\diamond (\neg p)$  ] for granted, the assertion [  $\diamond p$  ] must signal that the other possibility is also available.

Note that,  $p$  and  $\neg(p)$  are mutually exclusive and cannot hold in the same world.

### 3.4. The meaning contribution of *–o* as an anaphor

Kripke (1990ms./2009) argued that *too* is an anaphor that refers to parallel information in the ‘active’ context. Heim (1992) had formally represented the proposal of Kripke by making *too* coindexed with the relevant constituent in the antecedent. For example, notice the indexing in the following example.

- (16) Piku<sub>i</sub> lives in Delhi and Anu<sub>i</sub> lives in Delhi too<sub>i</sub>.

which says: Anu lives in Delhi, in addition to Piku.

Heim takes the general rule for the interpretation of *too* to be:

- (17)  $\phi[\alpha_F]too_i$  presupposes  $x_i \neq \alpha \wedge \phi(x_i)=1$

Chemla and Schlenker (2012), analyzed *too<sub>i</sub>* to be a propositional anaphor. They defined *too<sub>i</sub>* in Rooth’s Alternative semantics. An expression  $E$  has an ordinary semantic value  $\llbracket E \rrbracket_o$  and a focus semantic value  $\llbracket E \rrbracket_f$ . The interpretation function is relativized to an assignment function  $g$  and an evaluation world  $w$ . If *too<sub>i</sub>* takes a clause  $\phi$  as its argument, the result will have the value in (18). (‘#’ means ‘undefined’)

- (18)  $\llbracket \phi too_i \rrbracket_o^{g,w} = \#$  unless,  
 a.  $g(i)(w)=1$   
 b.  $\llbracket g(i) \rrbracket_o \in \llbracket \phi \rrbracket_f^g$   
 c.  $\llbracket g(i) \rrbracket_o \neq \llbracket \phi \rrbracket_o^g$   
 If  $\llbracket \phi too_i \rrbracket_o^{g,w} \neq \#$ , then  $\llbracket \phi too_i \rrbracket_o^{g,w} = \llbracket \phi \rrbracket_o^{g,w}$

Among the definedness conditions, (18.a) says the proposition that *too<sub>i</sub>* is anaphoric to is true; (18.b) says the ordinary semantic value of the proposition is an element of the focus

## Obligatory Additive Particle on Negation

semantic value of the utterance  $\phi$ ; (18.c) says the ordinary semantic value of that proposition is different from the ordinary semantic value of  $\phi$ . The last line says that *too<sub>i</sub>* does not have any contribution in the asserted content of  $\phi$ .

For the additive particle *-o*, I adopt Heim's analysis in Chemla and Schlenker's formulation. That is, I take *-o* to be anaphoric to a constituent that is an alternative of the focused constituent in the utterance. In (14) above, the focused constituent is *NOT*.

In Bangla, when two embedded Intransitive-*vPs* are contrasted *-o* can appear only on the verb and not on the negation in the negated *vP*.

(19) Robi aste-o pare, na jete-o pare  
 Robi come.inf-O may, not go.inf-O may  
 'Robi may come and not go as well.'

(20) \*Robi aste-o pare, na-o jete pare  
 Robi come.inf-O may, not-O go.inf may  
 'Robi may come and not go as well.'

However in Polarity contrast, the best option is to have *-o* on negation.

(21) Robi aste-o pare, na-o aste pare  
 Robi come.inf-O may, not-O come.inf may  
 'Robi may come and he may not come as well.'

The example (21) is like example (14) in Scenario 1, which motivates the conclusion that *NOT* is focused in (14).

Going back to the meaning of (14) in Scenario 1, the antecedent entails [It is possible that Ritu is at home], which can be represented as [MAY [AFF<sub>*i*</sub> [Ritu be at home]]], where 'AFF<sub>*i*</sub>' is the affirmative operator, the relevant alternative of *NOT*. Considering *-o* as the anaphor, *-o* bears the index '*i*'.

The utterance (14) in Scenario 1 can be represented as:

(22) [Not-*o<sub>i</sub>*]  $\lambda_7$  [MAY [t<sub>7</sub> [Ritu be at home]]]

Let,  $\phi$  be the function [ $\lambda_7$  [MAY [t<sub>7</sub> [Ritu be at home]]]].

Then,

(23)  $\llbracket (13) \rrbracket_o^{g,w} = \llbracket [\text{NOT- } o_i] \phi \rrbracket_o^{g,w} = \#$  unless,  
 a.  $\phi(g(i))(w) = 1$   
 b.  $\llbracket g(i) \rrbracket_o \in \llbracket \text{NOT} \rrbracket_f^g$

c.  $[[g(i)]_o] \neq [[NOT]_o^g]$

... where  $g(i) = AFF$

These definedness conditions form the meaning contribution of  $-o$  in (14)<sup>4</sup>:

(24)  $[\phi(AFF)(w)=1 \wedge [[AFF]_o \in [[NOT]_f^g] \wedge [[AFF]_o \neq [[NOT]_o^g]]]$

### 3.5. Asymmetry in availability of alternatives

There is an inherent asymmetry between  $[\diamond(p)]$  and  $[\diamond(\neg p)]$ . For  $[\diamond(\neg p)]$  the additive particle seems obligatory, but for  $[\diamond(p)]$  that is not the case, until one adds  $[\diamond(\neg p)]$  in the context.

In terms of alternatives, this asymmetry can be restated as,  $[\diamond(\neg p)]$  by default has  $[\diamond(p)]$  as a formal alternative, but not vice versa.  $[\diamond(p)]$  can have  $[\diamond(\neg p)]$  as an alternative only when it is made salient as a contextual alternative.

The asymmetry in terms of alternatives can be readily captured in terms of the notion of (structural) Complexity as defined for the derivation of Formal alternatives in Fox and Katzir (2011).

(25) Focus-sensitive version of Complexity from Fox and Katzir (2011):

The set of formal alternatives of  $S$ ,  $F(S)$  is defined as the set of all structures obtained from  $S$  by replacing focused constituents within  $S$  with constituents that are at most as complex as the original constituents.

(26) Source of substitution for a given constituent X in context C:

- a. The lexicon
- b. The sub-constituents of X
- c. The set of salient constituents in C

For the case under discussion, Complexity, will allow (27) to have (28) as one of its formal alternatives.

(27) [It is possible that John is not<sub>F</sub> at home]

(28) [It is possible that John is at home]

To implement Fox and Katzir (2011)'s notion of Complexity in this case appropriately, I would have to assume  $\Sigma P$  (Laka 1990), so that *NEG* can have *AFF* as an alternative.

(29) [It is possible that John is [ $\Sigma P$  [not]<sub>F</sub> at home] ]<sup>5</sup>

(30) [It is possible that John is [ $\Sigma P$  [Aff] at home] ]

<sup>4</sup> In Guha(2016ms.) I discuss problems with this meaning (24) and suggest a modification.

<sup>5</sup> For Bangla,  $\Sigma P$ , above TP, would be the highest projection below CP. The clause that does not have  $\Sigma P$  will have TP as its highest projection.



## Obligatory Additive Particle on Negation

But, Complexity will prevent (31) from having (32) as a formal alternative, as (32) is structurally more complex than (31), because according to Laka's proposal a simple affirmative sentence (31) does not have  $\Sigma P$ , but (32) does.

- (31) [It is possible that John is at home]  
(32) [It is possible that John is [ $\Sigma P$  not at home]]

Only when (32) is made salient in the context, (32) would be part of the set of alternatives of (31).

Note, if we assume that  $\Sigma P$  has a different type from TP, then a type-based theory of alternatives could also derive the asymmetry.

There is an interesting aspect of using  $\Sigma P$  syntax here. Laka argues that emphatic affirmatives (*John did come*) have  $\Sigma P$  in their structure. So the prediction would be, when  $[\diamond(p)]$  is an emphatic affirmative,  $[\diamond(\neg p)]$  would be available as a formal alternative. So for affirmatives, we have two options,  $[\diamond(p)]$  and  $[\diamond(p)-o]$ . The latter could represent the emphatic affirmative, which has  $[\diamond(\neg p)]$  as alternative. For  $[\diamond(\neg p)]$  we do not have such structural ambiguity.

### 3.6. Implicatures

For sentence (14) in Scenario 1, the utterance is :

$$(33) \quad \varphi = [\diamond(\neg p)] \wedge [\diamond p]$$

Since *NOT* is F-marked, the only formal alternative of  $\varphi$  in context C that we consider is:

$$(34) \quad \text{ALT}(\varphi, C) : [\diamond p] \wedge [\diamond p]$$

The ALT in (34) is entailed by the  $\varphi$ . Therefore, it does not lead to a S.I. (Secondary Implicature)

If we considered just the prejacent  $\psi$  (35) of the additive particle, and that the entire sentence is focused, so that both the modal and the negation are focused, then we derive mutually exclusive alternatives to  $\psi$ .

$$(35) \quad \psi = \diamond(\neg p)$$

- (36) ALT( $\varphi, C$ ) :
- a.  $\diamond p$
  - b.  $\square(\neg p)$
  - c.  $\square p$

Assuming an opinionated speaker,

(37) Quality Implicature(Q.I.) :  $B_S [\Diamond \neg(p)]$  (the speaker believes that  $[\Diamond \neg(p)]$ )

(38) Primary Implicatures(P.I.) :

- a.  $\neg B_S [\Diamond p]$
- b.  $\neg B_S [\Box (\neg p)]$

The ALTs (36.a) and (36.b) are mutually contradictory and (36.c) contradicts the Q.I. (and 36.b). Therefore, none of them would lead to Secondary Implicature (S.I.), and we would get Ignorance Inferences from (38.a) and (38.b).

However, the ALT (36.a) is presupposed, so that cannot become an Ignorance Inference. In that case, ALT (36.b) can lead to a S.I. that is consistent with the Q.I. and we don't derive any Ignorance Inferences.

(39) Secondary Implicature(S.I.) :  $B_S \neg [\Box (\neg p)]$

As it happens, the S.I. (39) is equivalent to the presupposition  $[\Diamond p]$ .

### 3.7. Deriving Obligatoriness: Maximize Presupposition!

The maxim of Maximize Presupposition states, “make your contribution presuppose as much as possible!” (from Sauerland 2008’s interpretation of Heim 1991) The maxim applies at situations when we encounter a competition between a pair of contextually equivalent sentences S and S’, such that S has a presupposition and S’ does not. S’ can be used only if the speaker is certain that the presupposition is not common ground or if the speaker is not certain whether the presupposition is common ground.

Applying the maxim to the case at hand:

The context of the utterance entails: [It is possible p]

Utterance:

(40) It is also possible  $\neg p$ .

The prejacent of the Additive particle is the Assertion :

(41)  $\psi = [\text{It is possible } \neg p]$ .

The Presupposition is (42) which is the formal and contextual Alternative of (41):

(42)  $\pi = [\text{It is possible } p]$ .

The utterance is:

## Obligatory Additive Particle on Negation

(43)  $[\psi \wedge \pi]$

If the speaker did not use the Additive particle, she would in effect utter just  $\psi$ .

Uttering  $\psi$  would implicate  $\neg [\phi \wedge \pi]$ , which in turn would implicate that the presupposition  $\pi$  is not common ground.

(44)  $\psi \rightsquigarrow \neg [\psi \wedge \pi] = \neg \psi \vee \neg \pi$

$(\neg \psi)$  is ruled out by the utterance  $\psi$ . Therefore,  $\psi$  implicates  $(\neg \pi)$ .

(45)  $[\neg \pi] = [\text{It is possible } p]$

$[\neg \pi]$  here indicates that the speaker knows that  $\pi$  is not satisfied or more crucially, that the speaker does not know whether  $\pi$  is satisfied.

However, [It is possible  $p$ ] is already part of the common ground. Hence, the Implicated Presupposition [Certain  $\neg$  (It is possible  $p$ )] or [ $\neg$  Certain (It is possible  $p$ )] is incompatible with this discourse. Therefore, to avoid the Implicated Presupposition, the speaker has to Maximize Presupposition!

### 4. Extending the analysis

#### 4.1.1. Discussion of other Mutually Exclusive cases

We have discussed the case of  $p$  and  $\neg(p)$  under an existential modal predicate. Since,  $p$  and  $\neg(p)$  cannot hold in the same world, in a context that takes  $p$  for granted one cannot felicitously assert  $[\diamond (\neg p)]$ . In other words, the narrow scope of the Additive particle is contradictory in the case under discussion, because that would make the assertion and the presupposition contradictory.

Let us now look at cases involving mutually exclusive alternatives under the possibility modal, which are equally ‘complex’.

Scenario 4:

News on TV:

‘The World Chess Championship is being played between Anand and Carlsen. Carlsen has already won two games.’

A: ækhono pãc-Ta game baki ache.

‘There are still five games to go.’

(46) **Anand-#(o)** Championship-Ta jit-te pare  
Anand-O championship-cla win-inf may.pres.3  
‘Anand may win the Championship too.’

Ishani Guha

The context makes the possibility of Carlsen winning the Championship salient, since he is already two games up. But A thinks that Anand's chance of winning is still open. A takes the context to entail [ $\diamond$  win (carlsen)] and utters: [ $\diamond$  win (anand)]-also.

Since, the antecedent is [ $\diamond$  win (carlsen)], *also* in the utterance (42) is anaphoric to it, and not just to the complement clause [win (carlsen)] at the exclusion of the modal. In other words, *also* has wide scope in this context.

- (47) Wide scope:
- a. Assertion: It is possible that Anand will win.
  - b. Additive presupposition: It is possible that Carlsen will win.

Given [win (anand)] and [win (carlsen)] are mutually exclusive alternatives, the narrow scope of *also* is ruled out.

- (48) Narrow scope:
- a. Assertion: It is possible that Anand will win.
  - b. (#) Additive presupposition: that Carlsen will win.

Thus effectively we will get the inference (due to 'local effect') *it is possible that Anand and Carlsen will win*, which is not permissible in the given scenario.

#### 4.1.2. Regular mutually compatible cases

As is evident from the discussion above, if we do not set up mutually incompatible opposition then the so called narrow scope reading would become possible.

Scenario 5:

Ritu wants to visit Robi and Shomir now.

A: Robi is at home now.

B:

- (48) **Somir-#(o)** ækhon baṛi-te thak-te pare  
Shomir-O now home-loc stay-inf may.pres.3  
'It is possible that Shomir is also at home now.'

- (49) Narrow scope:
- a. Assertion: It is possible that Shomir is at home.
  - b. Additive presupposition: Robi is at home.

In the context of what A says in the conversation above, (49.b) is the salient additive presupposition. This presupposition is obtained by the narrow scope of the Additive particle.

If the scenario was set appropriately, in this case the wide scope could be infelicitous. It is easy to see that with the deontic modal *par-* 'may'.

## Obligatory Additive Particle on Negation

Scenario 6:

A: Robi had the ice cream, though he was not allowed to have it.

- (50) #Somir-o icecreamTa khe-te pare  
Shomir-O icecream eat-inf may.pres.3  
a. 'It is allowed that Shomir also eats the icecream.'  
b. # 'It is also allowed that Shomir eats the icecream.'

The reading in (50.b) in Scenario 6, looks like the wide scope reading with the inference *it is allowed that Shomir and Robi eats the icecream*. However, this inference is slightly different from the wide scope reading and is due to what has been called the 'obligatory local effect' (Tonhauser et al. 2013). The narrow scope of the additive along with the projection processes gives rise to such a meaning in this case.

### 4.2. Obligatoriness of additive particle in mutually exclusive scenarios

In Scenario 4, it is part of the common ground that [ $\diamond$  win (anand)].

- (51) Utterance:  $\varphi = \diamond$  win (carlsen)  $\wedge$   $\diamond$  win (anand)

Since, [ $\diamond$  win (anand)] is already part of the common ground, the additive particle has to be used in B's utterance to avoid the implicated presupposition [Certain  $\neg$ [ $\diamond$  win (anand)]] or [ $\neg$ Certain [ $\diamond$  win (anand)]]], which are incompatible with the discourse.

The discussion in section (4) shows that when the complement clause of the existential modal holds an Additive Particle, the shape of the presupposition triggered is dependent on whether we are considering mutually exclusive alternatives or mutually compatible ones.

### Summary

In this squib I have discussed cases of mutually exclusive pairs of alternatives placed under the possibility modal. In Bangla (and in other South Asian languages), we see an obligatory additive particle showing up in such cases. Based on the literature on obligatory presuppositions, I have tried to reason that not using the additive particle with one possibility excludes the possibility of the other. So in scenarios, when all the possibilities are open, the speaker is obligated to use the additive particle to signal this openness. The paper also shows that in such constructions we always get a wide scope of the additive.

The squib gives rise to important questions that must be addressed in future work. One needs to understand the predicate *par-* as opposed to other predicates expressing existential modality. It is important to include the concessive conditionals in the discussion for a fuller analysis of the phenomenon.

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