

# Modal Debris: Threefold Ambiguities between Permission, Weak Necessity, & Strong Necessity in Bengali

SHRAYANA HALDAR, *Massachusetts Institute of Technology*

## ABSTRACT

In this paper, I explore the possibility of X-marking (in the sense of von Stechow & Iatridou 2023) used in weak necessity modals being null. I argue that this is exactly what seems to be the case in a hitherto undiscussed phenomenon in Bengali, in which the modal that's canonically described as the strong necessity modal of the language shows a systematic ambiguity between strong and weak necessity in upward entailing environments, and between strong necessity and permission in non-upward-entailing environments. The behavior in upward entailing contexts can be understood if X-marking (that is known to turn strong necessity modals into weak necessity ones) can have null exponence, and the behavior in non-upward-entailing contexts can be explained if Staniszewski's (2022) account of weak necessity and X-marking is espoused, which involves strengthening an underlyingly existential meaning into a universal one. Crucially, the QR approach to neg-raising in weak necessity modals fails to explain the facts. I also address an independent problem of alternatives faced by Staniszewski's account and propose a solution for that.

*Keywords:* modality, weak necessity, neg-raising, exhaustification, scalar implicatures

## 1 Introduction: X-marking

It has been well-known since von Stechow & Iatridou (2008) that there's a very robust cross-linguistic trend of deriving the Weak Necessity (henceforth, "WN") modal by putting a special marker on top of the Strong Necessity (henceforth, "SN") modal. In von Stechow & Iatridou (2023), this marker has been dubbed *the X-marker*. This is easily observed in Romance, among other languages that von Stechow and Iatridou survey. The French examples that illustrate this are in (1).

- (1) a. Tu **devrais** faire la vaisselle, mais tu n'es pas obligé.  
you **must-X** do the dishes but you NEG-be-2s NEG obliged  
"You ought to do the dishes, but you're not obliged to do them."
- b. #Tu **dois** faire la vaisselle, mais tu n'es pas obligé.  
you **must** do the dishes but you NEG-be-2s NEG obliged  
*The only possible reading, which is contradictory:*  
"You must do the dishes, but you're not obliged to do them."

von Fintel & Iatridou (2008, 2023) illustrate that language after language follows this pattern. See their papers for more data to the same effect. What I will explore in this paper is a mostly empirical question: what if the X-marker is null? von Fintel and Iatridou’s observations suggest that, if a language has a null X-marker, then a systematic ambiguity will arise between SN and WN. In the rest of this paper, I will make some observations that will lead us to believe that Bengali is such a language, unlike what has been assumed before.

The following is how the rest of the paper is organized. In section 2, I elaborate on the empirical evidence for the SN-WN ambiguity in Bengali and point out that there’s a possibility of analyzing this as a consequence of having a null X-marker. In section 3, I show various ways of detecting a permission reading in the modal, which is expected under Staniszewski’s account, and thus, provides cross-linguistic support for it. In section 4, I summarize in prose how this whole state of affairs can be accounted for under that account. Section 5 points out an independent problem for the process of exhaustification to lead to the desired meaning, and I propose a solution to that, which I call *LOGICAL PARALLELISM*, a contrast on the available alternatives of an LF. Section 6 concludes the paper.

## 2 Bengali: ambiguity between SN and WN

Bengali, like many other Indo-Aryan languages such as Hindi, doesn’t have dedicated lexical elements for modals. (See Bhatt 1999 for Hindi.) For instance, the Bengali copula [*fiḅḅa*] has been reported to express universal modal force, as shown in (2) (Bjorkman & Cowper 2016, Lahiri 2022).<sup>1</sup> The subject of this construction is always marked with a dative. The predicate of the prejacent of the modal always shows an invariant third person agreement, which is the default agreement. Here, only the obligation reading (“□<sub>SN</sub>”) is available, the permission reading (“◇”) isn’t (but of course, it’s entailed.) (All Bengali examples are given in the IPA.)

- (2) t̪o-ke e-t̪a kor-te fiḅḅ-e.  
2.SG.INFRML-DAT this-CLF do-INF COP-PRES.3

*One of the possible readings (see below for more):*

“You have to do this.”

(✓ □<sub>SN</sub>, ✗ ◇)

However, what has gone unmentioned in the literature on Bengali modals to the best of my knowledge is that [*fiḅḅa*] can also have a WN interpretation in upward-entailing (henceforth, “UE”) environments. We can appreciate the WN reading of [*fiḅḅe*] by looking at (3)-(4). In (3a-3b), with different adverbs in the conjuncts, contradiction arises if the modal isn’t changed appropriately. (3c) shows that when the modal is changed appropriately, contradiction doesn’t arise. That is, the two modals in (4) must be different in exactly the same way the modals in (3c) are.

1. I will restrict attention to the present tense form of [*fiḅḅa*] in this paper, which is [*fiḅḅe*].

- (3) a. #You should always do this, but right now, you shouldn't do this.  
 b. #You always have to do this, but right now, you don't have to do this.  
 c. You should always do this, but right now, you don't have to do it.

- (4)  $\begin{matrix} \text{to-ke} & & \text{e-ta} & & \text{ɯb.somɽe-i} & \text{kor-te} & \text{ɦɽ-e}, & & \text{kintu} & \text{ækhon} \\ \text{2.SG.INFRML-DAT} & & \text{this-CLF} & & \text{all.time-FOC} & \text{do-INF} & \text{COP-PRS.3} & & \text{but} & \text{now} \end{matrix}$   
 $\begin{matrix} \text{to-ke} & & \text{e-ta} & & \text{kor-te} & \text{ɦɽ-e} & & & \text{n-a.} \\ \text{2.SG.INFRML-DAT} & & \text{this-CLF} & & \text{do-INF} & \text{COP-PRS.3} & & & \text{NEG-IMPV} \end{matrix}$

***The only possible non-contradictory reading:***

“You should always do this, but right now, you don't have to do it.”

This is a challenge for von Stechow & Iatridou (2008, 2023) because they provide extensive cross-linguistic evidence to the effect that asserting the SN modal in a language and then subsequently negating it leads to contradiction, (1b) being an example of that. That means that the two modals in (4) — one affirmed and the other negated — must actually be two different things. What are these different things and how do they come to be different? An answer to this question becomes apparent when we pay attention to several recently observed interesting facts about WN modals which leave their intricate traces in the behavior of the ambiguous Bengali modal [ɦɽe]. What these facts bring out is an underlying permission meaning in WN modals. These were observed in Staniszewski (2022) for English. I will show below that this permission reading is also detectable in the WN [ɦɽe]. This will suggest that the way the two modals in (4) are different in exactly the way a core component of Staniszewski's account of WN predicts they would be.

### 3 The permission reading

Staniszewski (2022) has made the intriguing observation that, when embedded under *no longer*, modals like *should* and *supposed to* trigger a presupposition that has the meaning of an existential, *i.e.*, a permission modal. This is shown in (5)-(6). The way (5)-(6) show this is the following: assuming *p* stands for the proposition *Students enter through the main lobby*, and *q*, for the proposition *Students enter through the cafeteria*, the (a) examples has the schema of  $\Box(p \vee q)$ , which gives rise to the distributive inferences  $\Diamond p$  and  $\Diamond q$ ; that is, *Students used to be **allowed** to enter through the main lobby* and *Students used to be **allowed** to enter through the cafeteria*. Because of these inferences arising from the (a) examples, the presuppositions of the (b) examples are satisfied in both discourses. Crucially, if *should* and *supposed to* only had a necessity meaning, then the presuppositions would have necessity meanings in them; that is, we would predict the presuppositions *Students used to be **required** to enter through the main lobby* and *Students used to be **required** to enter through the cafeteria*. Therefore, these two modals can't be given a simple analysis under which they just have necessity meanings. (7) shows that the presupposition triggered by *no longer* is indeed that its prejacent used to be true.

- (5) a. It used to be the case that students should either enter through the main lobby or the cafeteria.  
 b. . . . but now they no longer should enter through the cafeteria.

- (6) a. It used to be the case that students were supposed to either enter through the main lobby or the cafeteria.  
 b. . . . but now they are no longer supposed to enter through the cafeteria.

[Staniszewski (2022), (74), (75): 204]

- (7) a. #I don't know whether John used to smoke, but he no longer smokes.  
 b. #John never used to smoke, but he no longer smokes.

Iatridou & Zeijlstra (2013), Homer (2015), and Zeijlstra (2017) have accounted for the ability of modals like *should* and *supposed to* to scope over sentential negation by proposing that they QR over negation. Zeijlstra (2017) should be especially noted since he gives a compositional account of neg-raising. There are several problems with this QR approach that have been pointed out in Staniszewski (2022), Jeretič (2021), Jeretič & Thoms (2023). The reader is pointed to this body of literature for evidence to against a QR approach in general, but, for our purposes here, there's no need to go over them, because it's easy to see why a QR approach won't work for (5)-(6): in the (b) examples, QR will result in LFs schematized as in  $\square > \textit{no longer} > p$ , where  $p$  stands for the prejacents *Students enter through the main lobby* and *Students enter through the cafeteria*. In this LF, the prejacent of *no longer* is not MODAL  $> p$ , but just  $p$ . That is, the QR approach predicts the presupposition that  $p$ . But, as can be easily checked, these presuppositions are unattested because the following discourses are felicitous.<sup>2</sup>

- (8) a. It used to be the case that students should either enter through the main lobby or the cafeteria. But {they never used to enter through the cafeteria/I don't know whether they ever used to enter through the cafeteria.} Now, the rules have changed and they no longer should enter through the cafeteria.  
 b. It used to be the case that students were supposed to either enter through the main lobby or the cafeteria. But {they never used to enter through the cafeteria/I don't know whether they ever used to enter through the cafeteria.} Now, the rules have changed and they are no longer supposed to enter through the cafeteria.

---

2. There's also the very recent paper by Mirrazi & Zeijlstra (2023), who propose an exhaustification-based account that I became aware of only after developing this paper. I leave a consideration of their paper to a future occasion. For what it's worth, they don't predict an ambiguity between strong and weak necessity.

Exactly same effects are found in Bengali. In the sentence in (9), we can see, thanks to the presupposition triggered by [*ar*] “no longer”, that [*h̄v̄e*] can have a permission reading, just as in (5)-(6), precisely because (9) is felicitous in both of the given contexts. Say, the prejacent of the modal is *p*, *i.e.*, the addressee wandering around all day. Felicity in the context in (9b) shows that the presupposition can be  $\diamond p$ ; otherwise, the sentence wouldn’t be felicitous in this context. In fact, in the context in (9b), even if one assumes that for the addressee to have been wandering around all day before she got engaged is frowned upon, given the conservatism, **therefore, definitely not obligatory**, the sentence is still felicitous. Therefore, we can conclude that the permission reading is available. Bengali examples with disjunction, parallel to (5)-(6), show the same behavior. Moreover, the fact that the sentence is fine in the context in (9b) as well confirms that there’s an actual ambiguity.

- (9)  $\overset{\text{to}}{\text{to-ke}}$                        $\text{ar}$                        $\overset{\text{fara-din}}{\text{fara-din}}$      $\overset{\text{to-to}}{\text{to-to}}$      $\text{kor-e}$      $\overset{\text{g}^{\text{h}}\text{ur-te}}{\text{g}^{\text{h}}\text{ur-te}}$      $\overset{\text{h̄v̄e}}{\text{h̄v̄e}}$   
 2.SG.INFRML-DAT    any.longer    whole-day    ONOMAT    do-GER    travel-INF    COP-PRES.3  
 n-a.  
 NEG-IMPFV

“You {are no longer {supposed/allowed} to/no longer have to} wander around all day.”

- a. **Context:** A person whose job involved a lot of wandering around throughout the day has found a new job and no longer has to do all the wandering around they once had to. The speaker says this to them. (✓ □<sub>SN</sub>)
- b. **Context:** In a certain conservative society, until a woman is engaged to be married, she has the permission to wander around wherever she wants. But once she is engaged to be married, she is no longer allowed to. In such a situation, a mother says this to her daughter who has been engaged to be married. The daughter never used to wander around before she got engaged. (✓ ◇)

This is part of a whole bunch of non-UE environments where WN modals seem to allow a permission reading, as well as an SN reading, for instance, under *only*, as shown in (10), and in polar questions, as shown in (9). In (10), the effect arises because of the negation in the assertive DE component of *only* (von Fintel 1999, von Fintel & Iatridou 2007). As for (11), in a response to (11a) in the given context, (11b), expressing the existence of a permission, is okay, but (11c), only understandable as expressing an obligation, is not okay. Therefore, the question must be asking about whether being down in the area is okay, not whether there’s an obligation to do so. The off-limits nature of the area ensures the naturalness of this permission reading, because then, there would definitely not be an obligation to be there. Again, the SN reading is also available in polar questions when a suitable context is provided, as shown in (12), which again confirms the ambiguity.

- (10)  $\underset{\circ}{\text{to-ke}}$                        $\text{æk}^{\text{h}}\text{on}$   $\text{ʃud}^{\text{h}}\text{u}$   $\underset{\circ}{\text{din-er}}$      $\text{bæla-}\underset{\circ}{\text{i}}$                        $\text{ber-o-}\underset{\circ}{\text{te}}$   
 2.SG.INFRML-DAT    now      only    day-GEN    half.of.the.day-FOC    leave-CAUS-INF  
 $\underset{\circ}{\text{fiD-e.}}$   
 COP-PRS.3

“Now, you are only {supposed/allowed} to go out during the day.”

- a. **Context:** A person whose job involved a lot of wandering around throughout the day has found a new job and no longer has to do all the wandering around they once had to. The speaker says this to them. (✓ □<sub>SN</sub>)
- b. **Context:** In a certain conservative society, until a woman is engaged to be married, she may go out during the day or during the night. But once she’s engaged to be married, she no longer may go out during the night, although she retains the permission to go out during the day. The following is said by a mother to her daughter who has been engaged to be married in such a society. The daughter never used to go out either during the day or during the night before she got engaged. (✓ ◇)

- (11) a. **Context:** Inside a possibly off-limits area.

A:  $\underset{\circ}{\text{to-ke}}$                        $\text{ki}$      $\text{ek}^{\text{h}}\text{ane}$   $\text{af-}\underset{\circ}{\text{te}}$                        $\underset{\circ}{\text{fiD-e?}}$   
 2.SG.INFRML-DAT    POL    here      come-INF    COP-PRS.3

“Are you supposed to come here?” (✓ ◇)

- b. B:  $\text{fiã}$ ,  $\text{t}^{\text{h}}\text{ik}$      $\text{at}^{\text{h}}\text{e}$ .    c. B’:  $\#\text{fiã}$ ,  $\underset{\circ}{\text{fiD-e}}$ .  
 yes    right    exist.PRS.3    yes, COP-PRS.3  
 “Yes, it’s okay.”    “Yes, I am.”

- (12) a. **Context:** The speaker has never seen the addressee’s workplace where the latter has to be present for work. The speaker is now there for the first time and they really don’t like the place. They ask the addressee this question, with the implication that they’re hoping the addressee would say that that they don’t have to come here because maybe they can work remotely.

A:  $\underset{\circ}{\text{to-ke}}$                        $\text{ki}$      $\text{ek}^{\text{h}}\text{ane}$   $\text{af-}\underset{\circ}{\text{te}}$                        $\underset{\circ}{\text{fiD-e?}}$   
 2.SG.INFRML-DAT    POL    here      come-INF    COP-PRES.3

“Do you have to come here?” (✓ □<sub>SN</sub>)

- b. B:  $\#\text{fiã}$ ,  $\text{t}^{\text{h}}\text{ik}$      $\text{at}^{\text{h}}\text{e}$ .    c. B’:  $\text{fiã}$ ,  $\underset{\circ}{\text{fiD-e}}$ .  
 yes    right    exist.PRES.3    yes, COP-PRES.3  
 “Yes, it’s okay.”    “Yes, I am.”

To sum up, we've seen that a single Bengali modal is ambiguous between SN and WN. This, when understood against the backdrop of von Stechow & Iatridou (2008, 2023), leads us to believe that Bengali is a language where the X-marker can have null exponence. Moreover, although Bengali differs from English in this respect, *i.e.*, the nullness of the X-marker, both of these languages show a particularly intriguing behavior under *no longer* and other non-UE environments, especially, those that trigger presuppositions. The presuppositions triggered in these cases allow a permission reading, which is unexpected if the basic meaning of WN modals involves universal quantification.

#### 4 What this teaches us

There are two main take-aways from this discussion of the SN-WN ambiguity in Bengali. First, since there's an ambiguity between SN and WN in UE environments, it poses a challenge for the robust cross-linguistic picture von Stechow & Iatridou (2023) paint. Second, since there's an ambiguity between SN and a permission reading in non-UE environments, especially in polar questions with no negation in them, it shows that the negated permission reading observed in cases of neg-raising can't be attributable to the modal QRing above negation, as already explained above.

This state of affairs provides striking support for the account of WN given in Staniszewski (2022). His is an account exceptionally complex, explaining which will prevent us from appreciating the paradigm-shifting insight he brings. Therefore, I will schematize the principal components of his analysis in prose and refrain from giving any formalisms. I refer the interested reader to the dissertation for the explicit semantics.

Staniszewski's account seeks to tie the cross-linguistic tendency of X-markers to derive WN from SN with the emergence of the permission reading of WN modals. He proposes that WN modals are not underlyingly WN modals. They begin their lives merged into the tree as a modal whose meaning is indistinguishable from the meaning of SN. For instance, in English, *should* starts off as a modal whose basic meaning is the same as that of, for instance, *have to*. The X-marker is then put on top of it. The X-marker is a generalized existential quantifier over ordering source sequences. This leads to the second step in the life of *should* — the existential force of the permission reading. At the next step, this permission reading is strengthened into the WN meaning through the process of computing scalar implicatures in the grammar (Fox 2007; Chierchia, Fox & Spector 2012; *inter alia*), for instance, by the EXH operator of Bar-Lev & Fox (2020), in UE contexts, and such exhaustification is vacuous in non-UE contexts because the unexhaustified meanings are already the strongest alternatives in their respective sets of alternatives. That is, WN is related to SN derivationally and the meaning of WN is reached through three steps: SN to permission to WN. This is part of a broader line of work that proposes underlyingly existential readings getting strengthened into universal ones via exhaustification (Bowler 2014; Bar-Lev 2018, 2021, Bar-Lev & Margulis 2014; Oikonomou 2022; Singh, Wexler, Astle-Rahim, Kamawar & Fox 2016; Jeretič 2021; *inter multa alia*).

The middle step, where the permission reading is reached, plays the central role in deriv-

ing the permission readings in non-UE contexts. For instance, when the X-marker is merged into the tree and the sister of *no longer* is this permission modal, the permission reading straightforwardly becomes the presupposition in the case of *no longer* > *should*. When the X-marker isn't merged, the permission meaning is simply never generated; therefore, the sister of *no longer* contains the basic SN meaning, which becomes the presupposition in the case of *no longer* > *have to*. In English, there's no optionality in whether the X-marker is merged in the case of *should*. Bengali is special in that there's this extra dimension of optionality in whether or not the X-marker is merged. This optionality of merging X-marking, then, can in principle, account for the ambiguity in Bengali.<sup>3, 4</sup>

So, Bengali, like English, is consistent with Staniszewski's account. But, I would like to argue that the implication is much stronger, in that Bengali bears out a typological prediction that Staniszewski makes. The prediction is that, under *no longer*, **an ambiguity between SN and WN should arise in languages where it's possible to have a null X-marker**. Crucially, this is not something that's predicted by QR accounts of neg-raising in WN, and therefore, pushes us precisely towards an account like Staniszewski's. Once we entertain the possibility of a null X-marker, **there's no longer any puzzle for von Fintel & Iatridou (2008, 2023), because, then, the presence/absence of the null X-marker is how the two modals in (4) differ, and no contradiction arises because the first is *should* and the second is *must***.

There's also the matter of how the permission reading arises in polar questions. This is a more complicated issue, which involves going into the specifics of the account. But, in short, the question LFs that lead to the permission reading lack the EXH operator, which is why the strengthening doesn't take place. Schematically, the LF looks like (13), where EVEN is an operator that asserts its prejacent and presupposes that its prejacent is the unlikelyest of its alternatives (Karttunen & Peters 1979, Staniszewski 2022). See Iatridou & Tatevosov (2016) for more on this kind of use of EVEN.<sup>5</sup>

- (13) *The*  $\diamond$  LF:  
 [EVEN [whether<sub>1</sub> [Q [t<sub>1</sub> [have-to-X p]]]]]  
 a. *Yes*: [have-to-X p]  
 b. *No*: [ $\neg$  [have-to-X p]]

3. Another crucial aspect of Staniszewski's account involves deriving the weak nature of WN, in the sense of von Fintel & Iatridou (2008, 2023). He implements this via pruning of alternatives in a way that is sensitive to the Question Under Discussion (QUD) of the form "Which preferences do I care about in this situation?" This is a direct translation of Rubinstein's (2014) notion of *negotiable* and *non-negotiable* priorities. See Staniszewski (2022) for more.

4. Recently, Weingartz & Hohaus (2023) have also presented a similar ambiguity between SN and WN in Afrikaans and Samoan. However, they don't consider issues of relative scope between modals and negation. So, their account is not relevant to my concerns here.

5. Staniszewski follows Guerzoni (2004) for how the meanings of polar questions are derived.



As shown above, the positive answer to this question has a permission reading. Therefore, if this question is answered with a positive  $[fi\check{v}e]$  in a declarative sentence, then, because declarative LFs are always exhaustified, we'll get WN if the X-marker is present in the LF and we'll get SN if it isn't. Either way, this declarative answer with  $[fi\check{v}e]$  ends up having a necessity reading, which is infelicitous (recall (11c)), because the question was about whether a permission exists. And, as usual, a negative answer to this question would have the meaning of a negated permission modal. This doesn't rule out (12), because, in that LF, there isn't any X-marker; therefore the SN reading is generated. **Again, the optionality of X-marking is crucial in deriving the ambiguity.**<sup>6</sup>

## 5 Absence of alternatives

### 5.1 The problem

Staniszewski derives the WN meaning by exhaustifying the permission reading into a stronger meaning. But this strengthening is only possible when the SN LF is unavailable to WN as an alternative. Otherwise, the SN alternative would be negated by EXH and further strengthening into the universal reading will no longer be possible. But, given what I've said above

6. For the sake of completeness, I should mention that there's another dimension of optionality, which is whether or not EXH is merged in the structure. This predicts that, if EXH is merged in the question LF, then the WN reading should arise in questions as well. This is borne out, as shown in (1). That is, in questions, the ambiguity is threefold.

- (i) a. **Context:** The addressee is a boss at an office. They and a friend of theirs are present at an initiation event for new employees. From their own experience at their own office, the friend knows that the boss doesn't have to be present at these events. That is, there's no hard-and-fast rule regarding this. What they do not know is whether, at this office, there's an unwritten, collectively understood desideratum that the boss be preferably present at such events. To get an answer to this question, the speaker asks this question to the boss, the addressee.
- A:  $t\check{o}-ke$                        $ki$     $ek^hane$     $af-te$          $fi\check{v}-e?$   
 2.SG.INFRML-DAT   POL   here   come-INF   COP-PRES.3  
 "Are you supposed to come here?" (✓ □<sub>WN</sub>)
- b. B:  $\#fi\check{a}\check{x}$ ,  $t^hik$     $atj^he$ .  
 yes   right   exist.PRES.3  
 "Yes, it's okay."
- c. B':  $fi\check{a}\check{x}$ ,  $fi\check{v}-e$ .  
 yes,   COP-PRES.3  
 "Yes, I am."

The LF below accounts for this possibility. Both of the possible answers to this question LF are the strongest alternatives in their respective sets of alternatives. That is, answering with a permission meaning ("Yes, it's okay") is not an option, which explain the infelicity of (1b).

- (ii) **The** □<sub>WN</sub> **LF**  
 $[whether_{t_1} [Q [EVEN [EXH [t_1 [have-to-X p]]]]]]$   
 ↑  
 a. *Yes*:  $[EVEN [EXH [have-to-X p]]]$   
 b. *No*:  $[EVEN [EXH [\neg [have-to-X p]]]]$

schematically, we can identify a problem. Suppose  $p$  stands for the prejacent of the modal,  $\Box_{\text{SN}}$  stands for the SN modal, and  $X$  stands for the X-marker in (14). Then, (14a) schematizes the LF that leads to the WN meaning, and the SN alternative is in (14b). As I said above, it's this SN alternative that must somehow be unavailable in order for Staniszewski's account to go through.

- (14) a.  $[\text{EXH} [\Box_{\text{SN}}\text{-}X p]]$   
 b. *The SN alternative:*  $\Box_{\text{SN}} p$

The same problem exists for English, which didn't go unacknowledged by Staniszewski (2022). His final reasoning was that the use of the X-marked structure is governed by the status of priorities in the contexts, unlike in the case of the  $\langle \textit{allowed}, \textit{required} \rangle$  scale, where the only difference is in the quantificational force, not in the ordering source. **Therefore, a X-marked structure and a non-X-marked structure can't compete for the purposes of implicature calculation (Staniszewski 2022: 291).** But the non-X-marked structure is still a possible deletion alternative, in the Katzirian sense (Katzir 2007, Fox & Katzir 2011). **Then, how do we reconcile the unavailability of the SN alternative with the notion of structural alternatives?** Staniszewski leaves this as an open question. Therefore, it seems we haven't found an answer to this question.

### 5.1.1 Logical Parallelism

I would like to propose an overarching solution to this narrow problem, which, as far as I can see, solves a very specific kind of problem manifesting in myriad ways in the literature. I propose (15).

- (15) **LOGICAL PARALLELISM (LP)**  
 If an LF has the schema  $[X O [Y Z]]$ , then  $[Y Z]$  can't be an alternative of this LF, if  $O$  is a projection of a logical word (in the sense of Gajewski 2002, Chierchia 2021), unless the logical word at that node is what  $\text{EXH}$  associates with.

**As a simple consequence of LP, the X-marker can't be simply deleted to get the SN structure.** Henceforth, I would call such inappropriately derived deletion alternatives *logically non-parallel alternatives*. Also notice that this doesn't prevent the generation of disjunct alternatives from a disjunction, which would require the removal of a logical word *or*, because, whenever that array of alternatives is to be generated, *or* is the associate of  $\text{EXH}$ . However, in the case of a WN structure — consisting of the SN modal and the X-marker — the X-marker isn't the associate of  $\text{EXH}$ , the SN modal is. Because, indeed, the associate of  $\text{EXH}$  is what generates the alternatives, and the modal is what triggers the generation of the subdomain alternatives. This is why the X-marker can't simply be deleted from the structure.

## 6 Discussion and conclusion

I've argued in this paper that Bengali seems to be a challenge for the cross-linguistic generalization in von Fintel & Iatridou (2008, 2023) that the SN modal of a language can't be both affirmed and negated as part of the same discourse. It no longer remains a challenge if X-marking can be null in the language. However, on a cautionary note, Bengali has a separate X-marking that appears in counterfactual conditionals. For instance, in (16), both antecedent and consequent X-marking is expressed with past habitual morphology. That is, in this respect, Bengali is similar to Hungarian, which also expones antecedent and consequent X-marking with the same morphology (von Fintel & Iatridou 2023: 1491-1492).

- (16) o            ɕoɖi ɕe-t-o,            ta-fiol-e            ami-o            ɕe-t-am.  
3.SG.NOM if            go-HAB-PST.3            that-COP-GER 1.SG.NOM-too go-HAB-PST.1  
“If (s)he {went/had gone}, then I {would have gone/would go} too.”

This past habitual morpheme that serves the purpose of X-marking doesn't appear in (4), unlike, for instance, in Spanish, where the combination of SN and the consequent X-marker yields the WN reading (von Fintel & Iatridou 2023, (61): 1492). So, although we seem to have discovered a null X-marker in Bengali, this appears to be a less than ideal way to understand the WN meaning of [*fiɖe*] because neither antecedent X-marking or consequent X-marking is null in the language. In Haldar (to appear) and ongoing work, I explore this in more detail and my current understanding is that this is, indeed, not a null X-marker, but something else. I refer the interested reader to Haldar (to appear) for some further interesting aspects of this Bengali modal that help us understand how this WN reading might be arising.

To conclude, this paper had two purposes: to provide empirical evidence from Bengali for the possibility of null X-marking, and to point out this cluster of data also provides cross-linguistic support for Staniszewski's (2022) account of WN. I've achieved these two goals by showing that, in Bengali, a single modal is ambiguous between SN and WN, which falls out of Staniszewski's account of X-marking, combined with the possibility of a null X-marker, and that *modulo* this ambiguity, the modal behaves under presupposition triggers like *no longer* exactly as expected from Staniszewski's account. There's also an independent problem of alternatives for exhaustification, *i.e.*, how to prevent the SN LF from being an alternative of the WN LF, which would jeopardize the account. For this, I proposed what I dubbed LOGICAL PARALLELISM, which prevents the generation of the SN alternative from the WN alternative.

## Acknowledgements

I'm grateful to Danny Fox, Kai von Fintel, Sabine Iatridou, and Amir Anvari for the discussions I had with them on this material. Also thanks to the people I consulted for their judgments and the audience for their comments at the LF Reading Group at MIT on November 22, 2023, and FASAL 14, where this was presented. All errors are mine.

## References

- Bar-Lev, Moshe E. 2018. *Free choice, homogeneity, and innocent inclusion*: The Hebrew University of Jerusalem dissertation.
- Bar-Lev, Moshe E. 2021. An implicature account of homogeneity and non-maximality. *Linguistics and Philosophy* 44. 1045–1097.
- Bar-Lev, Moshe E. & Danny Fox. 2020. Free choice, simplification, and innocent inclusion. *Natural Language Semantics* 28. 175–223.
- Bar-Lev, Moshe E. & Daniel Margulis. 2014. Hebrew *kol*: a universal quantifier as an undercover existential. In Urtzi Etxeberria, Anamaria Fălăuș, Aritz Irurtzun & Bryan Leferman (eds.), *Proceedings of Sinn und Bedeutung 18*, 60–76.
- Bhatt, Rajesh. 1999. *Covert modality in non-finite contexts*: University of Pennsylvania dissertation.
- Bjorkman, Bronwyn & Elizabeth Cowper. 2016. Possession and necessity: From individuals to worlds. *Lingua* 182. 30–48.
- Bowler, Margit. 2014. Conjunction and disjunction in a language without ‘and’. In Todd Snider, Sarah D’Antonio & Mia Weigand (eds.), *Proceedings of SALT 24*, 137–155. LSA and CLC Publications.
- Chierchia, Gennaro. 2021. On being trivial: grammar vs. logic. In Gil Sagi & Jack Woods (eds.), *The semantic conception of logic: Essays on consequence, invariance, and meaning*, 227–248. Cambridge, United Kingdom: Cambridge University Press.
- Chierchia, Gennaro, Danny Fox & Benjamin Spector. 2012. Scalar implicature as a grammatical phenomenon. In Claudia Maienborn, Klaus von Stechow & Paul Portner (eds.), *Semantics: an international handbook of natural language meaning*, vol. 3, 2297–2331. Berlin, Boston: de Gruyter.
- von Stechow, Kai. 1999. NPI licensing, Strawson entailment, and context dependency. *Journal of Semantics* 16. 97–148.
- von Stechow, Kai & Sabine Iatridou. 2007. Anatomy of a modal construction. *Linguistic Inquiry* 38(3). 445–483.
- von Stechow, Kai & Sabine Iatridou. 2008. How to say ought in Foreign: The composition of weak necessity modals. In J. Guéron & J. Lecarme (eds.), *Time and modality*, vol. Studies in Natural Language and Linguistic Theory 75, 115–141. Berlin, Germany: Springer.
- von Stechow, Kai & Sabine Iatridou. 2023. Prolegomena to a theory of X-marking. *Linguistics and Philosophy* 46. 1467–1510.
- Fox, Danny. 2007. Free choice and the theory of scalar implicatures. In Uli Sauerland & Penka Stateva (eds.), *Presupposition and implicature in compositional semantics*, 71–120. London, United Kingdom: Palgrave Macmillan.
- Fox, Danny & Roni Katzir. 2011. On the characterization of alternatives. *Natural Language Semantics* 19(1). 87–107.
- Gajewski, Jon. 2002. L-analyticity in natural language. Unpublished manuscript. MIT.
- Guerzoni, Elena. 2004. Even-NPIs in Yes/No questions. *Natural Language Semantics* 12(4). 319–343.

- Haldar, Shrayana. to appear. Towards an etiology of weak necessity in a Bengali modal based on homogeneity. In *Proceedings of CLS 60*, .
- Homer, Vincent. 2015. Neg-raising and positive polarity: The view from modals. *Semantics & Pragmatics* 8(4). 1–88.
- Iatridou, Sabine & Sergei Tatevosov. 2016. Our even. *Linguistics and Philosophy* 39(4). 295–331.
- Iatridou, Sabine & Hedde Zeijlstra. 2013. Negation, polarity, and deontic modals. *Linguistic Inquiry* 44. 529–568.
- Jeretič, Paloma. 2021. *Neg-raising modals and scaleless implicatures*: New York University dissertation.
- Jeretič, Paloma & Gary Thoms. 2023. Modals, negation and movement: a reassessment. *Glossa* 8(1).
- Karttunen, Lauri & Stanley Peters. 1979. Conventional implicature. *Syntax and Semantics* 11. 1–56.
- Katzir, Roni. 2007. Structurally-defined alternatives. *Linguistics and Philosophy* 30(6). 669–690.
- Lahiri, Utpal. 2022. Modal-aspect interactions in Bangla. In Samir Alam, Yash Sinha & Sadhwi Srinivas (eds.), *Proceedings of (F)ASAL 11*, .
- Mirrazi, Zahra & Hedde Zeijlstra. 2023. Missing words and missing worlds. In Maria Onoeva, Anna Staňkova & Radek Šimík (eds.), *Proceedings of Sinn und Bedeutung 27*, 435–452. Praha: Charles University.
- Oikonomou, Despina. 2022. Detecting variable force in imperatives: A modalized minimal approach. *Natural Language and Linguistic Theory* 41. 1201–1256.
- Rubinstein, Aynat. 2014. On necessity and comparison. *Pacific Philosophical Quarterly* 95. 512–554.
- Singh, Raj, Ken Wexler, Andrea Astle-Rahim, Deepthi Kamawar & Danny Fox. 2016. Children interpret disjunction as conjunction: Consequences for theories of implicature and child development. *Natural Language Semantics* 24. 305–352.
- Staniszewski, Frank. 2022. *Modality and time in logical context*: Massachusetts Institute of Technology dissertation.
- Weingartz, Siena & Vera Hohaus. 2023. Variable modal strength in Afrikaans and Samoan: Deriving strong necessity from weak necessity. In Mira Grubic, Jeanne Lecavelier, Prarthanaa Manjunath Bharadwaj & Malte Zimmerman (eds.), *Proceedings of TripleA 10*, .
- Zeijlstra, Hedde. 2017. Universal quantifier PPIs. *Glossa* 2(1). 1–25.