The role of *-i-na* in Bangla *ki*-exclamatives

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Abstract

This paper analyzes the role of *-i-na* in Bangla *ki* 'what'-exclamative structures. The distribution and behaviour of the negative marker *na* in the *-i-na* particle suggests that it is expletive in nature and is attached to the emphatic particle *-i*. We argue that *-i-na* attaches at the phrasal, but not at the sentential level. We also claim that *-i-na* carries an uninterpreted exclamative clause type feature and serves the purpose of domain widening which, as per Zanuttini and Portner (2003), is a crucial component of exclamatives. In this paper, we put on an argument in favour of Bangla *ki* having two lives: an argument life and a modifier life which is exclamatory by itself. We propose a unified semantics of *-i-na*, which can be compatible with both the lives of *ki*. Throughout the paper, we embrace the Hamblin denotation while analyzing the *wh*, *ki* and base our analysis of exclamatives on Balusu's (2019) rendition of widening.

1 Introduction

Exclamatives are those clause-types that encode speaker's surprise about a state of affairs that surpasses or breaches their expectations. These clause-types can be of various forms. They can have *wh*-words, can simply be propositional, or can be made of definite DPs, *etc.* (Rett 2008b,a, 2011). Positive *wh*-exclamatives like (1) have been a subject to study since Elliott (1974), Grimshaw (1979). Eventually, cross-linguistic investigations started on them, *e.g.,* in Paduan (Zanuttini and Portner 2000, 2003), in Hungarian (Lipták 2005), in Catalan (Villalba 2001, Miró 2006), in Japanese (Ono 2006), in Telugu, Kannada (Balusu 2019), and many others.

(1)   What movies Ray made!

However, negative exclamative structures have received far less attention. Cross-linguistic evidence shows that, unlike English, there are languages that exhibit negation in exclamatives. This phenomenon was first noted by Portner and Zanuttini (2000) in Paduan, and thereafter in Modern Hebrew (Aviad 2007), Hungarian (Huszár and Halm 2020), Russian (Zevakhina 2015), and many other languages. Bangla (a.k.a. Bengali; Indo-Aryan) also qualifies under the class of languages appearing to have negative exclamative structures.

In this paper, we focus on the Bangla *ki*-exclamatives (*i.e.,* exclamatives with *what*) containing the *-i-na* particle in themselves. We diagnose this clause type as negative exclamative where the negation marker *na* is expletive in nature. We also exhibit that this negation marker along with an emphatic *-i* works as a single unit in *ki*-exclamatives. Let us consider the following:

(2)   Context: *Speaker is surprised at the body temperature which is quite higher than normal.*

    a. ʧʰeleʈa=r   ki   ʤɔr-**i-na** ʧʰilo!
        boy.Clf=Gen what fever-I-NA be.Pst.3p
        'How very feverish the boy was!'

    b. *ʧʰeleʈa=r ki-**i**   ʤɔr-**na** ʧʰilo!   c. *ʧʰeleʈa=r ki-**i**   ʤɔr ʧʰilo-**na**!
        boy.Clf=Gen what-I fever-NA be.Pst.3p   boy.Clf=Gen what-I fever be.Pst.3p-NA
        Intended: 'How very feverish the boy was!'   Intended: 'How very feverish the boy was!'

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d. *ʧʰeleʈa=r-**i** ki ʤɔr-**na** ʧʰilo! e. *ʧʰeleʈa=r-**i** ki ʤɔr ʧʰilo-**na**!
   boy.Clf=Gen-I what fever-NA be.Pst.3p   boy.Clf=Gen-I what fever be.Pst.3p-NA
   Intended: 'How very feverish the boy was!'   Intended: 'How very feverish the boy was!'

As seen above, (2-b)-(2-e) turn out to be ungrammatical where the negative marker *na* is parted away from the *-i* particle. It turns out that the negation *na* is always adjacent to *-i*. Turning to the only grammatical one in (2-a), it conveys the information that the speaker is surprised at the fact that the boy had severe fever. It instantiates a gradable reading where the *wh*-word, *ki* does not act like an argument of the verb, *ʧʰilo*. However, our observation verifies that the concerned *wh*-word in *ki*-exclamatives containing the *-i-na* particle can obtain argument-like status too. For example, (3) tells us that the speaker is surprised at Satyajit Ray doing almost everything (*e.g.,* directing movies, writing stories, composing music, and so on) in his entire lifespan.

(3)   ʃottoʤiʈ raj ʤibɔn=e ki-**i-na**   koreʧʰilen!
      Satyajit Ray life=Loc what-I-NA do.Perf.Pst.3p.Hon
      'Satyajit Ray did so many versatile things in life!'

As opposed to (2-a), the *wh*-word in (3) acts like an argument of the transitive verb, *do*, being a complement to it.

Apart from *ki*-exclamatives, other types of *k*-exclamatives in Bangla also allow *-i-na* to occur in them, forming a status of negative exclamative structure. Table 1 shows some Bangla *k*-words that *-i-na* can get attached to:

k-words	-i-na
ki 'what'	✓
kibʰabe/kæmon kore 'how (in sense of *manner*)'	✓
kɔʈo 'how (in sense of *degree/number*)'	✓
kotʰaj 'where'	✓

Table 1: Different Bangla *k*-words & *-i-na*

Although *-i-na* is flexible with most of the *k*-exclamatives in Bangla, we in this paper have confined ourselves in analyzing the role of *-i-na* only in *ki*-exclamative constructions. We argue that the particle *-i-na* has the uninterpreted exclamative clause type feature and serves the purpose of domain widening which is a key component of *wh*-exclamatives, as mentioned in Zanuttini and Portner (2003) (ZP, henceforth). In this paper, we address the question of how it can be analyzed at the syntax-semantics interface in a compositional way. Instead of viewing *ki*-words/phrases as quantified expressions, we treat them as sets of alternatives (à la Kratzer and Shimoyama 2002, Shimoyama 2006, Beck 2006) and make use of Hamblin semantics (Hamblin 1973) to execute the compositional technicalities.

The next section sheds light on the fact that Bangla *ki*-exclamative structures have two lives. §3 questions if the negation marker in *-i-na* is semantic in nature. §4 follows up on the true nature of *-i-na*. §5 is dedicated to decode the semantic nature of *-i-na*. In this section, we build up a detailed compositional analysis that has been done within the framework of Hamblin semantics. Lastly, §6 concludes the paper, providing food for future.

2   Dual identity of *ki*-exclamatives

Bangla *ki*-exclamative clauses manifest two types of *ki*, which is very much rife in this language in concern. As mentioned earlier, the *wh*-item, *ki* acts in an argument-like manner on one hand while

on the other hand, it acts more like a modifier denoting degrees higher than the contextual standard (cf. Guha and Bhattacharya 2020). See the following contrast between (4) and (5):

(4)   Context: *Speaker is surprised that the boy eats so many types of meat, some of which are really rare and unusual.*

    maŋʃ=er   moḍḍʰe ʧʰeleʈa ki-i-na   kʰaj!
    meat=Gen in   boy.Clf what-I-NA eat.Prs.3p
    'The boy eats so many, if not all, unusual meats!'

(5)   Context: *Speaker is surprised at the boy running so fast.*

    ʧʰeleʈa ki   ʤore-i-na ḍouɽaʧʧʰe!
    boy.Clf what fast-I-NA run.Prog.Prs.3p
    'How fast the boy is running!'

In (4), the value for *ki+-i-na* is drawn from the set of different kinds of meats, some of which are unusual for someone to have, while in (5) *ki* is acting like a modifier followed by a gradable predicate, *viz. fast.* Let us call the latter version of *ki exclamatory modifier.* This modifier version of *ki* stays obligatorily exclamative in the absence of *-i-na*, (7). The difference between regular modifiers and exclamatory modifiers lies in the observation that modifiers which are exclamatory cannot be used in questions; they exclusively occur in exclamatives. On the other hand, regular modifiers can occur both in questions and exclamatives. The modifier avatar of *ki*, which is always exclamatory in nature, cannot be licensed while forming questions, (7), whereas the regular modifier *kɔʈo* 'how' can occur in both exclamatives and questions, (6).

(6)   ʧʰeleʈa kɔʈo ʤore ḍouɽaʧʧʰe✓!/✓?
    boy.Clf how fast run.Prog.Prs.3p
    ✓'How fast the boy is running!/ ✓how fast is the boy running?'

(7)   ʧʰeleʈa ki   ʤore ḍouɽaʧʧʰe✓!/✗?
    boy.Clf what fas   run.Prog.Prs.3p
    ✓'How fast the boy is running!/✗how fast is the boy running?'

Thus, the differentiating pattern between regular and exclamatory modifier is generalized as in what follows in Table 2:

k-modifiers	Speech act	
	?	!
ki 'what'	✗	✓
kɔʈo 'how'	✓	✓

Table 2: Two types of Bangla *k*-modifiers: Exclamatory & Regular

    The exclamatory modifier *ki* can be easily replaced with the regular modifier *kɔʈo*. The synonymy of (5) and (8) exhibits that. But, the same replacement cannot be executed when *ki* has the status of argument. It is noted that the meaning of (4) cannot be retained in (9).

(8)   ʧʰeleʈa kɔʈo ʤore-i-na ḍouɽaʧʧʰe!
    boy.Clf how fast-I-NA run.Prog.Prs.3p
    ✓'How fast the boy is running!'

(9)   ʧʰeleʈa kɔʈo-i-na kʰaʧʧʰe!
    boy.Clf how-I-NA eat.Prog.Prs.3p

✓'How much the boy is eating!' [quantity/amount reading]
✗'The boy is eating so many, if not all, unusual things!'   [no quantity/amount reading]

This argument *vs.* modifier division of *ki* in exclamatives gets a strong foothold if we make use of intransitive verbs in the scenario. Let us have a look at the following sentences:

(10) **Ambiguous *ki*-exclamatives:**
   a. tʃʰeleʈa ki   kʰatʃtʃʰe!
       boy.Clf what eat.Prog.Prs.3p
       'The boy is eating an unusual item!' [argument reading]
       'The boy is eating so much!' [modifier reading]
   b. tʃʰeleʈa ki   poɽtʃʰe!
       boy.Clf what read.Prog.Prs.3p
       'The boy is reading an unusual book/article!' [argument reading]
       'The boy is reading so much!' [modifier reading]

(11) **Unambiguous *ki*-exclamatives:**
   a. tʃʰeleʈa ki   gʰumatʃtʃʰe!
       boy.Clf what sleep.Prog.Prs.3p
       'The boy is sleeping too much!' [modifier reading]
   b. tʃʰeleʈa ki   kãd̥tʃʰe!
       boy.Clf what cry.Prog.Prs.3p
       'The boy is crying too much!' [modifier reading]

When the verbs are transitive as in (10-a) and (10-b), there open up two possibilities, *viz.* the argument reading and the gradable reading. When the reading is a gradable one, we argue that the exclamatory modifier *ki* modifies a null gradable predicate ($\varnothing_{gr.}$) following it. So, we are assuming an underlying [*ki* $\varnothing_{gr.}$] structure in this case. The argument reading can be exported both from (10-a) and (10-b), because the verbs being transitive can select for an object argument. Thus, sentences like (10-a) and (10-b) turn out to be ambiguous between those two readings. Contrarily, verbs such as *sleep*, *cry*, being intransitive in nature, cannot be compatible with the object-taking possibility at all. Hence, (11-a) and (11-b) turn out to be absolutely unambiguous bearing only the gradable reading.

In this paper, we delve into analyzing the role of *-i-na* in Bangla *ki*-exclamatives that give us both the argument and modifier readings. But, before getting into the details of it, we need to understand the nature of the negation in the *-i-na* particle. The next section will zoom in on it.

3   Is the negation semantic in *-i-na*?

Following Portner and Zanuttini (2000), Zanuttini and Portner (2000), exclamatives allow sentential negation only if it is expletive. Along their lines, we show that the nature of the negative marker *na* in the above mentioned structures is also the same - it is an *expletive* negation, not a semantic one. The most convincing way to put an argument in favor of expletive negation is that they cannot license strong NPIs (Yoon 2011). If we try to accommodate the strong Bangla NPI, *viz. ar* 'anymore'[3] in the above negative *ki*-exclamatives they become ungrammatical. Let us look at the following two examples:

(12) tʃʰeleʈa (*ar)   ki-i-na   kʰatʃtʃʰe!
      boy.Clf anymore what-I-NA eat.Prog.Prs.3p
      *'What items the boy is eating anymore!'

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[3]See Bhadra et al. (2016) for the strong NPI-hood of *ar*.

(13)   ʧʰeleʈa (*ar)   ki   ʤore-i-na d̪ouɽaʧʧʰe!
         boy.Clf anymore what fast-I-NA run.Prog.Prs.3p
         *'How fast the boy is running anymore!'

(12) and (13) are perfectly acceptable and grammatical without the strong NPI *ar*.

     As opposed to disallowing the strong NPI, the expletive *na* certainly allows the Bangla PPI, *viz.* *ʃɔrbod̪a-i*[4] 'always'. This strengthens our assumption that the negation in *-i-na* is not semantic. Consider the following examples that show *ʃɔrbod̪a-i* as a PPI and how the presence of *-i-na* in the above-like exclamatives can easily allow the inclusion of this PPI:

(14)   a.   ram (*ʃɔrbod̪a-i/✓kɔkʰono-i) bʰalo ranna kɔre   na.
             Ram always-Foc/ever-Foc   well   cook   do.Prs.3p Neg
             Intended: 'Ram never cooks well.'
      b.   ram (✓ʃɔrbod̪a-i/*kɔkʰono-i) bʰalo ranna kɔre.
             Ram always-Foc/ever-Foc   well   cook   do.Prs.3p
             Intended: 'Ram always cooks well.'

(15)   ram (✓ʃɔrbod̪a-i) ki-i-na   koreʧʰe   or ma=er   ʤonne!
         Ram always-Foc   what-I-NA do.Prf.Prs.3p his mother=Gen for
         'Ram has always done almost every possible thing for his mother!'

(16)   ram (✓ʃɔrbod̪a-i) ki   ʤore-i-na hãʈe!
         Ram always-Foc   what fast-I-NA walk.Prs.3p
         'Ram always walks so fast!'

(14-a) and (14-b) are supporting examples which show that *ʃɔrbod̪a-i* cannot occur in a negative context, whereas the NPI *kɔkʰono-i* can. Thus, the PPI-hood of *ʃɔrbod̪a-i* comes to the fore. (15) and (16) exhibit that the occurrences of *-i-na* cannot block PPIs. They supply us the foothold to claim this *na* as an expletive one.

4   Unfurling the nature of *-i-na*

Before we pursue the semantic analysis of *-i-na*, it is important to understand its true nature. This section breaks down the meaning denotation of *-i-na*. §4.1 shows the structural position of *-i-na* and §4.2 evinces that *-i-na* bears a flavor of exclamation in it.
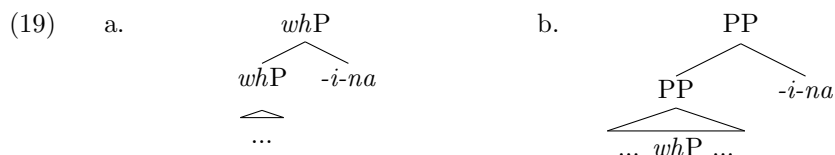
4.1   *-i-na* is not sentential, but phrasal

We argue that *-i-na* does not attach at the sentential level, but at the phrasal level instead. This can be seen in the following structure (17) where the entire post-positional phrase (PP) moved to a higher position taking the *-i-na* with it. The ungrammaticality of (18) seems to prove our notion. In (18) *-i-na* attaches to the verb, behaving like a sentential negation. But, (18) comes out to be ungrammatical, and hence we can say that *-i-na* attaches only to the phrase-level constituents. Have a look at the following examples:

(17)   [ki   d̪arun   biʃɔj nije]-*i-na*   amra kɔt̪ʰa bollam!
         what marvelous topic about-I-NA we   talk   tell.Pst.1p
         'What a marvelous topic we talked about!'

(18)   [ki   d̪arun   biʃɔj nije]   amra kɔt̪ʰa bollam(*-*i-na*)!
         what marvelous topic about we   talk   tell.Pst.1p-I-NA
         Intended: 'What a marvelous topic we talked about!'

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[4]Bhadra et al. (2016) mention that a range of Bangla NPIs and PPIs can take *-i* and *-o* that are typically considered as focus particles in this language.

(17) is a pied-piped structure where a *wh*-expression drags the encompassing phrase with it to the front of the clause, *i.e.* the whole [*wh*...]-*i-na* phrase moves past the subject of the exclamative clause. This phenomenon of pied-piping gives us the footing to assume that the *-i-na* composite attaches to the whole PP. Thus we see that *-i-na* does not take the whole sentence in its scope, rather it attaches to the phrase-level chunks. For instance, it can be appended to the *wh*-phrase as in (2-a) and (4), or to the PP as in (17). We argue that this *-i-na* particle is *adjoined* to a phrasal projection, rather than being *merged* with it. It only requires its sister to contain a *wh*-phrase. In other words, *-i-na* s-selects a *wh*-phrase rather than c-selecting it. The following structures can capture the idea of *-i-na* adjunction:

(19)   a.   *wh*P   b.   PP

Below the tree labels:

- *wh*P tree: *wh*P — *-i-na*, with *wh*P dominating "..."
- PP tree: PP — *-i-na*, with PP dominating "... *wh*P ..."

4.2   *-i-na* seeks for an exclamative force

An intriguing fact to be noted is that the occurrence of *-i-na* in the above structures always resulted in exclamative constructions. Therefore, we claim that *-i-na* seeks for an exclamative force while attached to a phrase level item. Our argument in favor of this claim also comes from the previously illustrated Bangla data. When we add *-i-na* to a phrase level projection, the whole clause necessarily becomes an exclamative. But, *wh*-questions are totally incompatible with this *-i-na* complex. Look at the following in (20) and (21):

(20)   Context: ✓*Speaker is surprised that the boy eats so many types of meat, some of which are really rare and unusual.*
        ✗*Speaker is asking which meat the boy eats.*

maŋʃ=er   moḍḍʰe   tʃʰeleʈa ki-i-na   kʰaj!/*?
meat=Gen in   boy.Clf what-I-NA eat.Prs.3p
'The boy eats so many, if not all, unusual meats!'

(21)   Context: ✓*BTS performed extraordinarily.*
        ✗*Speaker is asking what songs BTS performed.*

BTS ki   gan-*i-na*   gailo!/*?
BTS what song-I-NA sing.Pst.3p
'What songs BTS sang!'

In (20), it is intended to convey that the boy eats so many unusual types of meat. It never denotes a question where the speaker intends to know which meat the boy eats. Analogously, (21) tells us that the speaker is surprised because BTS performed beyond her/his expectation. It does not convey such a meaning where the speaker is inquiring about the songs BTS performed. What we noted from here is that the addition of *-i-na* to the *wh*-phrases results in exclamative formations in both the examples. Hence, 02(20) and (21) no longer remain questions.

Recap: So far, we have seen that Bangla *ki*-exclamatives manifest two types of *ki*, one is argument and another is modifier which is only licensed in exclamative constructions. We also noted that the negation in *-i-na* is non-semantic, non-sentential in nature. We argued that *-i-na* adjoins to the phrase-level items, rather than getting merged with them. It also carries an uninterpreted exclamative clause type feature, we argued. With these things on our plate, the next section is dedicated in unpacking the semantic account of *-i-na*.

5 A Hamblin-semantic profile of what *-i-na* offers us

Most influential and existing approaches on exclamatives include *non-degree approach* (D'Avis 2002), *degree approach* (Miró 2006, Rett 2008a) and the *widening approach* (ZP). The D'Avis-like non-degree approach cannot properly account for the degree readings. On the other hand, the degree approach also fails to capture the non-gradable readings of certain Bangla *wh*-exclamatives like (22).

(22)   *Context: Rishi saw Ravi on the street after several years, and it came as a surprise to Rishi.*

     kake   dek^{h}lam   adʒ!
     whom see.Pst.1p today
     Intended: 'You won't believe whom I saw today.'

The only option left with us is to follow the widening approach of ZP. However, as Balusu (2019) pointed out, the widening notion of ZP won't work for exclamatives like the following in (23):

(23)   Heinz is amazed at who Uma married.   (Balusu 2019, pg: 112)

The ZP account on exclamatives[5] are based on Karttunen's (1977) denotation on questions *i.e.,* the set of alternatives are consisted of true answers[6]. Following ZP, (23) will have only one alternative. Therefore as per ZP account, the domain$_1$ cannot go under widening with respect to (23). Let us see (24) below:

(24)   Suppose the alternatives are [Kiran, Bhanu, Ravi] and the True answer is {Ravi}
     Domain$_1$ = Uma married Ravi
     Domain$_2$ = ???   (*ibid.*)

    Bangla also has similar exclamative constructions like (23). Therefore to keep an unified analysis, we follow Balusu's (2019) solution to the problem. He suggested that instead of following Karttunen alternatives (*i.e.,* denotation of a question as set of *true* answers) if we follow Hamblin alternatives (*i.e.,* questions denote set of *possible* answers), the widening account of ZP works uniformly for all readings of exclamative clauses. Another crucial point that Balusu made is about how to reach at the initial domain or D$_1$ which undergoes widening. He solved it by equating D$_1$ with the Expectation Set (ES) which was already in Rett (2011), Rett and Murray (2013). Given that speaker's expectations are reflected as sets of possible worlds, ES of the speaker contains the propositions that are expected by him/her in that context. Balusu also mentioned about two types of ES, *i.e.,* with respect to the *speaker* (ES$_{SPKR}$) and *norm* (ES$_{NORM}$). It is well known that *wh*-exclamatives can convey speaker's surprise or not. In the following example, the exclamation means that the curry is hotter than

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[5]As expounded by ZP, there are two basic syntactic properties of exclamatives, which foster to two prime semantic or meaning denoting properties as follows:

  A. An exclamative clause structure must contain a *wh*-operator. Therefore, exclamatives posit the property of denoting a set of alternative propositions in terms of meaning relation.

  B. An abstract morpheme FACT must occupy the left periphery of an exclamative identifying factivity *i.e.,* the content of the proposition is presupposed.

The set of propositions in *wh*-exclamatives is extended by a *widening* relation. This relation extends the standard domain of quantification from D$_1$ to D$_2$ as follows:

  (i) $[\![1]\!]^{D_2} - [\![1]\!]^{D_1} \neq 0$

  (ii) $\forall x \forall y [(x \in D_1 \ \& \ y \in (D_2 - D_1)) \rightarrow x \prec y]$ and;

  (iii) Every $p \in [\![1]\!]^{D_2, \prec} - [\![1]\!]^{D_1, \prec}$ is presupposed to be true.

[6]Although ZP embraced the Karttunen's (1977) denotation of interpreting questions, they were also open to other approaches such as those of Hamblin (1973) and Groenendijk and Stokhof (1984).

normal, but not beyond speaker's expectations.

(25)   It is not surprising how very hot the curry is!   (Balusu 2019, pg: 122)

Exclamation refers to surprise only if speaker's expectations are exceeded. Speaker's expectations can be exceeded even when normative ones are not. Let us witness such an instance as in what follows:

(26)   How very cold it is! (says someone with a fever, even as it is warm outside.)   (*ibid.*)

With all these notions in hand, we try to accumulate the semantics for Bangla *ki*-exclamatives that carry the *-i-na* particle. We propose a unified semantics for *-i-na*, which can account both for the argument and modifier readings of *ki*-exclamatives mentioned in §2.

5.1   Zooming in on the argument reading of *ki*

As stated before, we embrace the widening approach in analyzing *ki*-exclamatives. This approach views exclamatives as sets of alternate propositions. Though the proponents of the widening theory took the Karttunen-style denotation in approaching the proposition-set view, we will not take the same style of denotation where only true answers are taken into consideration. If only true answers are considered, then analyzing the sentences like (23) becomes problematic. Instead, we embrace the Hamblin-style denotation of questions to account for the *ki*-exclamative, (4), where the argument-like *ki* has the denotation in (27) relative to $D_1, \prec$. The domain D_1 is considered as the set - {chicken, pork, deer meat}, and $\prec$ denotes increasing order of unusualness.[7]

(27) $[\![\text{ki}]\!]^f_{D_1,\prec} = \{\text{chicken, pork, deer}\}$

Notably, the *wh*-word, *ki* is viewed as a *wh*-pronoun rather than a quantified expression. The value of the *wh*-word must be focus sensitive, because the ordinary value of it is undefined. Now, we argue that the particle *-i-na* is the R_{widening} functor that takes (27) as its domain of quantification. Say, the adjunction of *-i-na* to *ki* expands is domain and the new expanded domain is D_2 which contains: chicken, pork, deer, snake, flesh. Syntactically speaking, the *-i-na* particle carries an [*u*Excl] feature which forces an exclamative operator to occur on the top. We can propose the LF of the exclamative CP in (4), as in what follows below in (28):

(28)

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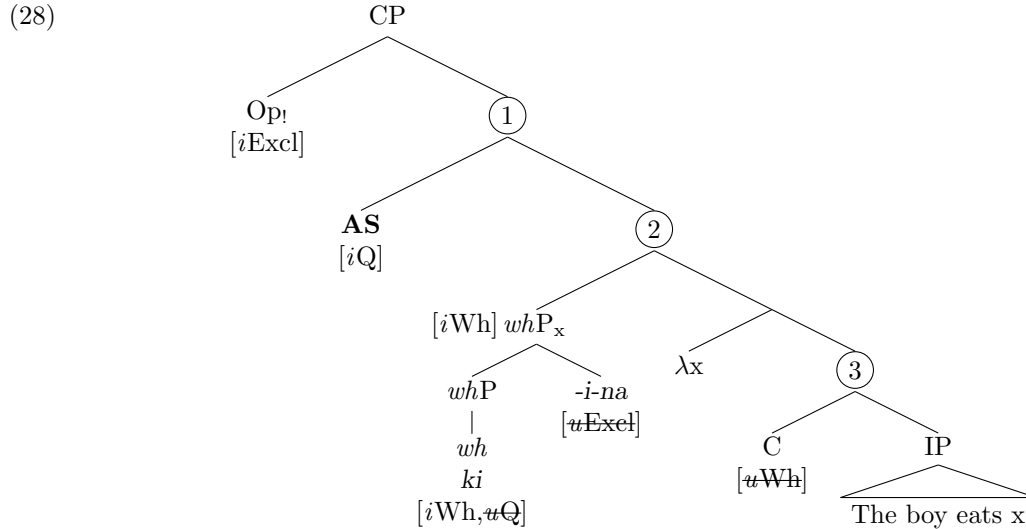
[7]Both D_1 and how $\prec$ is determined over D_1 are defined with respect to the speaker here.

In (28), all the uninterpreted features are checked and deleted via Zeijlstra's (2012) Upward Agree. Following the Hamblin-style treatment, we do not situate the interpreted clause type feature on C. Rather, the AltShift (**AS**) is responsible for the interrogative semantics (Kotek 2016, 2018), and Op!, we argue, is liable for the exclamative semantics. The above LF stands in favor of the notion that *wh*-exclamatives have question semantics. Up to ③, the rule of composition is ordinary Functional Application. It denotes an open proposition, "that the boy eats x" where x is a free variable which needs to be bound. Now, the free x is abstracted over and it point-wise composes with the $wh\mathrm{P_x}$. As a result, the focus sensitive denotation of ② will be as in (29):

(29) $[\![②]\!]^f_{\mathrm{D_2},\prec} = \{\lambda w.\text{the boy eats x in } w : \mathrm{x} \in \{\text{chicken, pork, deer, snake, flesh}\}\}$

Now, the **AS** operator takes the alternatives denoted by $[\![②]\!]^f_{\mathrm{D_2},\prec}$ and shifts them into the ordinary dimension (cf. Kotek 2016, 2018). Thus, the interpretation of ① will be as in (30):

(30) $[\![①]\!]^o_{\mathrm{D_2},\prec} = \{\lambda w.\text{the boy eats x in } w : \mathrm{x} \in \{\text{chicken, pork, deer, snake, flesh}\}\}$

When the alternatives are shifted into the ordinary dimension, the exclamative operator, Op!, we argue, acts on them. The interpretation of Op! will be like (31), in which ans_1 when applied to a question returns the maximal true answer to that question (Heim 1994):

(31) $[\![\mathrm{Op!}]\!]^w = \lambda Q_{\langle st,t\rangle} : \exists p[p = ans_1(K(Q)(w)) \wedge p \notin \mathrm{ES_{SPKR/NORM}} \wedge p(w) = 1].\{p \mid p = ans_1(K(Q)(w)) \wedge p \notin \mathrm{ES_{SPKR/NORM}} \wedge p(w) = 1\}$ (cf. Roberts and Sasaki 2021)

We define the operator, K in (31) as Karttunen operator which takes a set of Hamblin alternatives and returns us the set of true answers, *i.e.,* Karttunen alternatives (*i.e.,* $K = \lambda Q_{\langle st,t\rangle} \lambda w_s \lambda p_{st}.p \in Q \wedge p(w) = 1$). This set of true answers will obviously be a subset of the set of Hamblin alternatives. Now, the Heim-ans_1 can act on this set of Karttunen alternatives. The necessity of the K operator is validated, because one can utter the following as in (32):

(32) Context: *Speaker is surprised that the boy eats so many unusual types of meat, though he does not eat chicken due to allergy from it.*

maŋʃ=er moḍḍʰe murgi bade ʧʰeleʈa ki-i-na kʰaj!
meat=Gen in chicken except boy.Clf what-i-NA eat.Prs.3p
'The boy eats so many, if not all, unusual meats except chicken!'

Thus, all of the candidates in the Hamblin set of alternative propositions are not true in (32). In this case, we need the K operator to extract the true answers from the widened domain of alternative propositions, so that ans_1 can apply to the set of true answers in order to give us the maximal true answer.

Let us again go back to (4)'s LF in (28). While uttering (4), the $\mathrm{ES_{SPKR}}$ denotes the set: {The boy eats chicken, The boy eats pork, The boy eats deer}. Given the boy eats all the items in $\mathrm{D_2}$, the interpretation of CP in (28) will be like (33):

(33) $[\![\mathrm{CP}]\!]^w = \exists p[p = \text{The boy eats chicken, pork, deer, snake, flesh} \wedge \text{The boy eats chicken, pork, deer, snake, flesh} \notin \mathrm{ES_{SPKR}} \wedge \text{The boy eats chicken, pork, deer, snake, flesh in } w].\{\text{The boy eats chicken, pork, deer, snake, flesh}\}$

5.2 The modifier reading of *ki* in focus

As mentioned in §2, the *wh*, *ki* in Bangla *ki*-exclamatives can come up with modifier readings too. In this section, we will deal with this type of examples and see how *-i-na* plays the role of a domain widener in this types of cases. Let us consider the following in (34):

(34)   Context: *John has become very much tall. Speaker says the following, though he/she is not surprised at John's being this much tall, because John's parents are also taller than the standard measurement of tallness.*

ʤɔn ki lɔmba-i-na hoeʧʰe! ʤoɖio eʈe ɔbak hɔ-ba=r
John what tall-I-NA become.Perf.Prs.3p though about it surprised be-Ger=Gen
kiʧʰu nei karon o=r ma baba ɖuʤonei kʰub lɔmba.
anything Neg because he=Gen mother father both very tall

'How very tall John has become! Although there is nothing to be surprised about it, because both of his parents are very tall.'

In (34), speaker is not surprised. Thus, the exclamation used here is intended to convey that the degree of tallness exceeds the expectations of the normative set, *i.e.,* ES_{NORM}, but not the expectations of ES_{SPKR}. Assume the following scale in Figure 1 which denotes different degrees of tallness, relative to the normative ground:
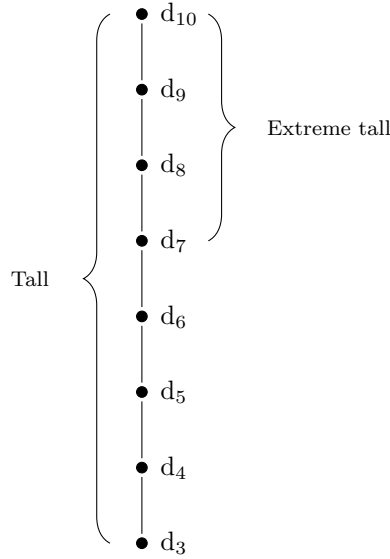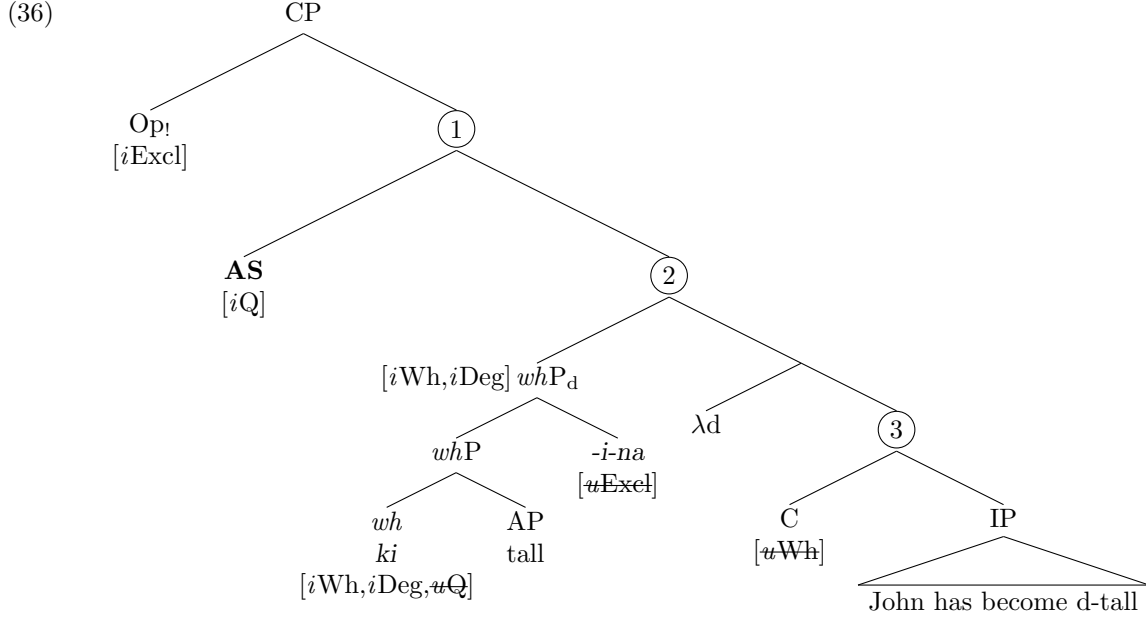

Figure 1: Normative scale of tallness

In this scale, the standard degree of tallness is assumed to be d_5. According to the normative ground, this is the minimum height one should have in order to qualify as a tall person. Therefore, with respect to this scale in Figure 1, the D_1 will denote the set: $\{d_6, d_5, d_4, d_3\}$, and the widened domain D_2 will be the set: $\{d_{10}, d_9, d_8, d_7\}$. Since the modifier *ki* is itself exclamatory in nature, as discussed in §2, the focus value of *ki lɔmba* 'what a tall' will be as in (35) where the degrees of tallness are greater than the standard d':

(35) $[\![\text{ki lɔmba}]\!]^f_{D_2,>} = \lambda d_d.\exists x \exists d'[\text{height}(x) \geq d' \wedge d > d']$

It is important to note that the semantic interpretation in (35) is evaluated with respect to the widened domain D_2, because the modifier avatar of *ki* is obligatorily exclamatory. Thus, D_1 is not the appropriate domain, relative to which *ki lɔmba* can be evaluated. In other words, the value for *ki lɔmba* can be drawn only from D_2, not from D_1.

The LF for the exclamative clause in (34), we propose, will be as in (36) where the degree

denoting whP moves to a higher position, leaving a trace of type d and creating a λ-binder that binds the trace:

(36)

CP
- Op$_!$ [iExcl]
- ①
  - **AS** [iQ]
  - ②
    - [iWh,iDeg] whP$_d$
      - whP
        - wh / ki / [iWh,iDeg,uQ̶]
        - AP / tall
      - $-i$-na [$u̶$Ex̶c̶l̶]
    - λd
    - ③
      - C [$u̶$W̶h̶]
      - IP / John has become d-tall

In (36), the contribution of -i-na is vacuous, because here its domain of quantification is such a set which is widened beforehand. This is why omitting the -i-na in (34) makes no difference in conveying the same sense as what we get in (34). The supporting evidence is shown in (37) where -i-na is dropped:

(37)   Context: *John has become very much tall. Speaker says the following, though he/she is not surprised at John's being this much tall, because John's parents are also taller than the standard measurement of tallness.*

ɟɔn   ki   lɔmba hoeʧʰe!   ɟodio eṭe   ɔbak   hɔ-ba=r   kiʧʰu
John what tall   become.Perf.Prs.3p though about it surprised be-Ger=Gen anything

nei karon   o=r   ma   baba ḍuɟonei kʰub lɔmba.
Neg because he=Gen mother father both   very tall

'How very tall John has become! Although there is nothing to be surprised about it, because both of his parents are very tall.'

Now, using the same compositional steps that are executed in computing the LF in (28), we get the ordinary value of ① in (36), as in (38):

(38) $[\![$①$]\!]^o_{D_2.>}$ = {λw.John has become d-tall in w : d $\in$ {d_{10}, d_9, d_8, d_7}}

Suppose, John has become d_9-tall and speaker is uttering (34). Then, the set, ES$_{\text{NORM}}$ will look like (39), the widened ES$_{\text{NORM}}$ will look like (40), and the maximal true answer will be as in (41):

(39) $\left\{\begin{array}{l} \text{John has become } d_6\text{-tall.} \\ \text{John has become } d_5\text{-tall.} \\ \text{John has become } d_4\text{-tall.} \\ \text{John has become } d_3\text{-tall.} \end{array}\right\}$

(40)
$$\left\{\begin{array}{l}\text{John has become } d_{10}\text{-tall.}\\ \text{John has become } d_9\text{-tall.}\\ \text{John has become } d_8\text{-tall.}\\ \text{John has become } d_7\text{-tall.}\\ \text{John has become } d_6\text{-tall.}\\ \text{John has become } d_5\text{-tall.}\\ \text{John has become } d_4\text{-tall.}\\ \text{John has become } d_3\text{-tall.}\end{array}\right\}$$

(41)   John has become d_9-tall.

Therefore, the interpretation of the exclamative CP in (36) will be as in (42):

(42) $[\![\text{CP}]\!]^w = \exists p[p = \text{John has become } d_9\text{-tall} \wedge \text{John has become } d_9\text{-tall} \notin \text{ES}_{\text{NORM}} \wedge \text{John has become } d_9\text{-tall in } w].\{\text{John has become } d_9\text{-tall}\}$

In (42), the maximal true answer is out of ES_{NORM}, not ES_{SPKR}. This is why speaker's surprise does not pop up in (34) which is still an exclamative.

A cross-linguistic outlook: In this paper, we embrace a question-based approach to analyze *wh*-exclamatives (contra. Rett 2008a,b, 2011). Cross-linguistically, we can provide supporting data in favor of following this line of approach. Bhattacharya et al. (2020) reported the following two Meeteilon data, as in (43) and (44), where the *wh*-exclamatives bear the question particle *-no*:

(43)   Kari isei ta-ri-no!
        What song hear-Prog-Q
        'What a song you are listening to!'

(44)   Kari wari li-ri-no!
        What story narrate-Prog-Q
        'What a story you are narrating!'

We argue that this Meeteilon Q particle, *-no* is the lexical realization of Kotek's **AS** operator which 'takes the alternatives introduced by its sister in the focus domain and shifts them into the ordinary domain'. After that, the exclamative operator, Op! will do its job to add an exclamative force to the clause.

6   Conclusion and food for future

In this paper, we focus only on Bangla *ki*-exclamative structures and investigate the role of *-i-na* in them. Bangla *ki*-exclamatives exhibit the dual identity of the *wh*, *ki* in exclamative clauses. These two identities of the concerned *wh* include both an argument-like life and an exclamatory modifier life. While unpacking the nature of exclamatory modifier, we mention two types of *k*-modifiers in Bangla. The regular modifier *kɔ̃ʈo* 'how' is flexible both with questions and exclamatives, while the exclamatory modifier *ki* 'what a' exclusively occurs in exclamatives.

Turning to the particle *-i-na*, we showed that the negation marker *na* in *-i-na* is an expletive negation, because it does not license strong NPIs, but easily licenses PPIs. This gives us a strong foothold to justify our claim that the *na* in *-i-na* is not semantic. We also showed the adjacency of *-i* and *-na* with the help of a range of Bangla data, where *-i* obligatory precedes *na*. We illustrated that the *-i-na* is not sentential rather it attaches at the phrasal level. We exhibit that this *-i-na* obligatorily sits in exclamatives and argue that it carries an uninterpreted clause type feature, forcing an exclamative operator to occur in the clausal spine. We also propose that *-i-na* is responsible for the domain widening that is a key component of *wh*-exclamatives.

In order to account for the semantics of *ki*-exclamatives, we resort to the question-based approach and follow Hamblin semantics, viewing *wh*-phrases as sets of alternatives instead of quantified expressions. This paper mainly banks upon Balusu's (2019) rendition of widening which is based upon Hamblin alternatives.

Food for future: Although we have established the syntactic and semantic contribution of *-i-na* in *ki*-exclamatives, the pragmatic aspect of it is not discussed in this paper. As we can already see in (15), some sort of *everything*-reading is available from the paraphrase. We assume that this *everything*-like reading is a type of conversational implicature, since uttering the sentence in (15) would still be felicitous even if Ram fails to do one thing for his mother. For evidence, consider the following in (45):

(45)   Context: *Ram has done almost everything for his mother, except arranging a flight-ride for her, which she always wanted.*

        take$_i$ plen=e   tʃɔɽ-a-no   baɖe ram ki-i-na   koretʃʰe   or ma$_i$=er
        her   flight=Loc ride-Caus-Ger except Ram what-ɪ-ɴᴀ do.Prf.Prs.3p his mother=Gen
        ɟonne!.
        for
        'Ram has done almost every possible thing for his mother, except arranging a flight-ride for her.'

We leave this pragmatic issue for a detailed study in future.

Acknowledgments

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