On the semantics of multiple wh-exclamatives in Bangla[1]

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Abstract. The scope of this paper addresses multiple wh-exclamative structures in Bangla (a.k.a. Bengali; Eastern Indo-Aryan). Though exclamatives are widely studied, the phenomenon of multiple wh-exclamatives is rarely cited. At the onset of analysing multiple wh-exclamatives, this paper revisits the proposition-set theory approach (D'Avis, 2002; Zanuttini and Portner, 2003; Chernilovskaya, 2010) that views wh-exclamatives as having a question-based semantics, and the degree approach (Miró, 2006; Rett, 2008a, 2011) that claims wh-exclamatives bear a degree component in their domain which is responsible for the surprising element of the clause. However, the degree approach rejects the idea of exclamatives with multiple wh-words (Rett, 2008a, 2011). This paper proposes a new unified framework that accounts for the syntax-semantics of Bangla multiple wh-exclamatives and wh-exclamatives in general.

Keywords: multiple wh-exclamatives, question approach, degree approach, type 1/2 exclamatives, QUD, Bangla.

1. Introduction

Elliott (1974) identifies the following clause type in English and termed it *absolute exclamation*. Elliott's (1974) theory on exclamations explains that exclamations involve transformational rules, through which the identical meaning between (1a) and (1b) is conveyed.

(1)   a.   *She is such an attractive woman!*
          b.   *What an attractive woman she is!*
          c.   *How beautiful these flowers are!*   (Elliott, 1974: 232)

However, further studies in exclamations notice semantic differences and distinguish (1a) from (1b) and (1c). The former is labelled as *proposition exclamation* which has proposition as its illocutionary force in the domain, whereas the latter group is termed as *exclamative* (Rett, 2008a, b, 2011). Though both have the same value of expressing surprise, exclamatives as opposed to proposition exclamations have a degree property as its illocutionary force (Rett, 2008a, b, 2011). A citing difference between proposition exclamations and exclamatives is that the presence of an overt wh-word is necessary to form exclamative structures (such as (1b) and (1c)). In contrast, wh-words need not be present to form proposition exclamations (1a).

Unlike English matrix wh-exclamatives that limit themselves to 'what-a' or 'what' and 'how' structures (1b)-(1c), Bangla is flexible and exhibits a range of wh-words in its exclamative repertoire. Therefore, while English matrix exclamatives can be appropriately analysed along the line of Miró (2006); Rett (2008a, b, 2011) *i.e.*, exclamatives express surprise at a higher degree, Bangla wh-exclamatives do not fit in the same framework. Due to a variety of uses of wh-words in exclamatives, Bangla displays both degree and non-degree readings. As an alternative to the degree approach, question-based approaches as espoused in D'Avis (2002); Zanuttini and Portner (2003); Chernilovskaya (2010) cannot successfully accommodate all the cross-linguistic instances of wh-exclamatives either.

This paper offers a revised framework. The proposal is built on the *widening* account of Zanuttini and Portner (2003) for wh-exclamatives and develops unique semantics by adding certain modifications to the existing theory. Though this paper restricts itself to the instances of multiple wh-exclamative structures in Bangla, the proposed framework can account for cross-linguistic evidence of wh-exclamatives from a compositional view.

We begin the paper by introducing exclamative clauses and further divide it into five sections. §2 explains the influential theories and their limitations in analysing multiple wh-exclamatives in Bangla. This section also presents the necessary modifications to the existing theories that help to extend the analysis in Bangla. §3 evinces Bangla multiple wh-exclamative structures and their intricacies. §4 puts forward a compositional analysis for Bangla multiple wh-exclamatives, and finally, §5 concludes the paper.

2. Background

Wh-exclamatives are either analysed as having a degree semantics (Miró, 2006; Rett, 2008a, b, 2011) or a question semantics (D'Avis, 2002; Zanuttini and Portner, 2003; Chernilovskaya, 2010). Before we build our analysis, this section briefly discusses the existing theories and their drawbacks in analysing cross-linguistic variations in wh-exclamatives.

2.1. A degree semantics for wh-exclamatives

Rett in her analysis on English wh-exclamatives follows Austin's (1962) *Speech Act Theory* in claiming that exclamatives are performative speech acts, and they express surprise at a degree higher than the contextually relevant standard. The degree approach bases itself on exclamatives having a degree force (2) as their illocutionary force operator, which states that the domain of an exclamative contains a degree and it is expressively correct if the DEGREE E-FORCE holds in a context C of a degree d that exceeds the standard s, and the speaker expresses surprise about it.

(2)   DEGREE E-FORCE($\mathscr{D}_{<d,<s,t>>}$) is expressively correct in context C iff $\mathscr{D}$ is salient in C and $\exists d, d > s$ [the speaker in C is surprised that $\lambda w.\mathscr{D}(d)(w)$]   (Rett, 2008a, b, 2011)

It is well-known that each utterance can be associated with only one illocutionary force operator. Therefore, DEGREE E-FORCE will have only one free degree complement (Rett, 2008b, a, 2011). Though it works for English wh-exclamatives as they do not include utterances like (3), following this approach will lead us to a licensing failure for multiple wh-exclamative clauses

spotted cross-linguistically. Huddleston (1993) points out that exclamatives like (3) are ungrammatical in English as they do not receive a degree interpretation, and it works in favour of Rett's theory. However, a Bangla counterpart of (3) (see example (18) in §3.1) is completely acceptable and grammatical. Hence, accounting for the cross-linguistic evidence of multiple wh-exclamatives through the degree approach is unsuitable in this concerned language.

(3)   *Who married which person!*   (Rett, 2008a: 610)

Apart from the above reason, Banerjee (2022) mentions another case where accepting the degree approach for Bangla wh-exclamatives is ill-suited. Let us go through it quickly.

Along with offering DEGREE E-FORCE as the illocutionary force operator for exclamatives, Rett advocates *The Degree Restriction* and *The Evaluativity Restriction* on wh-exclamatives. The prior one restricts exclamatives to always having a degree reading and dismisses the idea that non-degree readings of wh-exclamatives exist. The latter defends the idea that exclamatives exceed the contextually standard scale, expressing surprise at a higher degree. The evaluativity restriction says – in a context where Rajiv did not expect Sima to be 4 ft. tall, but he finds out Sima to be actually 4.6 ft. tall, he cannot express surprise in this case. This is because 4.6 ft. is considered to be a short height universally. Therefore, the evaluativity restriction claims that an exclamative utterance must surpass the contextually set standard to be expressively correct.

As for the degree restriction, follow the English example in (4). It is uttered in a context where the speaker expresses surprise at the number of languages Mimi speaks. Though it lacks an overt numeral degree morphology, (4) will have an *amount* or *quantity* reading (Rett, 2008a, b, 2011). Rett builds her ground of analysis by proposing a null QUANTITY[2] operator (Cresswell, 1976) which covertly supplies the degree reading of quantity for (4).

(4)   *(My,) What language(s) Mimi speaks!*   (Rett, 2008a: 604)

(4) in Rett's theory also gets a *gradable* interpretation in a context where the languages Mimi speaks are exotic to a higher degree, and the speaker is surprised that Mimi speaks them. The gradable reading of (4) is achieved by assuming that (4) has a covert gradable predicate $\mathbb{P}$, and the value of it is contextually assigned (Milner, 1978; Gérard, 1980; Gutiérrez-Rexach, 1996; Villalba, 2003; Miró, 2006). This theory, however, rejects the idea that exclamatives can have *individual* reading *i.e.*, (4) cannot express surprise in a context where Mimi speaks a specific language (say Spanish). However, Banerjee (2022) cites that Bangla wh-exclamatives do receive an individual reading depending on the context. Another point noted in Banerjee (2022) is that the degree theory does not consider the manner readings of 'how'-exclamatives. 'How' in English ranges over both manner and evaluatives.[3] However, Rett claims that since manners do not receive a degree interpretation, they cannot occur in exclamative contexts. Therefore, (5) will only receive an interpretation where Buck rode his horse beautifully, dangerously *etc.*, but never bare-backed or saddled.

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[2] $[\![\text{QUANTITY}]\!] = \lambda P \lambda d \lambda Q \exists X [P(X) \wedge Q(X) \wedge \mu(X) = d]$
where QUANTITY associates plural individuals with degree arguments corresponding to their quantity and μ measures the size of a plural individual X (Rett, 2008a: 604).

[3] 'How' also ranges over gradable degrees such as, 'How short you are!'(Rett, 2008a: 607).

(5)   *How Buck rode his horse!*
       ✗**Manner:** *bare-backed, saddled*
       ✓**evaluatives:** *beautifully, dangerously, clumsily*   (Rett, 2008a: 607)

In contrast to Rett's claim, Bangla wh-exclamatives show manner readings of 'how' exclamatives (see Banerjee, 2022). Therefore, we see that the degree account on exclamatives is inadequate in more than one way to capture the different instances of wh-exclamatives available in Bangla.

Now we turn to the question-based account on exclamatives.

2.2. A question semantics for wh-exclamatives

As both wh-exclamatives and wh-questions always carry an overt wh-operator, the proponents of this approach view wh-exclamatives as mirror images of wh-questions. There are two sects in this approach. While D'Avis (2002) and Chernilovskaya (2010) explain exclamatives embracing Heim's *two notions of answerhood* (1994), Zanuttini and Portner (2003) conceptualised a sentential force responsible for wh-exclamatives and termed it *widening*.

D'Avis's (2002) and Chernilovskaya's (2010) analyses of exclamatives follow Karttunen's view on questions *i.e.*, questions denote set of true answers – exclamatives as a resemblance of questions also denote set of true answers, upon which Heim's answerhood operator acts (D'Avis, 2002; Chernilovskaya, 2010). However, D'Avis (2002) proposes the following two felicity conditions that exclusively hold for exclamatives – (i) the speaker's expectations entail the negation of $answer_1(w)$, and (ii) the speaker knows $answer_2(w)$ (D'Avis, 2002; Chernilovskaya, 2010). What distinguishes exclamatives from questions is that exclamatives express surprise at a particular answer to the wh-clause. Consider the German example in (6). In (6) the speaker expresses surprise where (s)he expected Maria to invite only John, but Maria invited Bill as well. The semantic representation of the wh-clause in (6) is outlined in (7).

(6)   *Wen   Maria eingeladen hat!*
       whom Maria invited   has!
       'Whom has Maria invited!'   (Chernilovskaya, 2010: 2)

(7) $\llbracket\text{wh-clause}\rrbracket(w) = \{p : \exists x[p = \lambda w'.\llbracket\text{invited}\rrbracket(w')(m)(x) \wedge \llbracket\text{invited}\rrbracket(w)(m)(x))]\}$
       $= \{\lambda w'.\llbracket\text{invited}\rrbracket(w')(j)(m), \lambda w'.\llbracket\text{invited}\rrbracket(w')(b)(m)\}$ (Chernilovskaya, 2010: 2)

Following D'Avis's and Chernilovskaya's proposal, Heim (1994)'s answerhood operator acts on the wh-clause giving us $answer_1$ (= weak exhaustive answer) and $answer_2$ (= strong exhaustive answer) in (8). Adhering to these two felicity conditions outlined above, (6) qualifies as an exclamative because the speaker did not expect $answer_1$ *i.e.*, Maria invited Bill, and the speaker knows $answer_2$ *i.e.*, who Maria exactly invited.

(8)   a. $\llbracket answer_1\rrbracket(w) = \bigcap\llbracket\text{wh-clause}\rrbracket(w)$
             $= \{w' : \llbracket\text{invited}\rrbracket(w')(j)(m) \wedge \llbracket\text{invited}\rrbracket(w')(b)(m)\}$
       b. $\llbracket answer_2\rrbracket(w) = \{w' : answer_1(w') = answer_1(w)\}$

$$= \{w' : [\![\text{invited}]\!](w')(j)(m) \wedge [\![\text{invited}]\!](w')(b)(m)$$
$$\wedge \forall x \notin \{j,m\} \neg [\![\text{invited}]\!](w')(x)(m)\} \qquad \text{(Chernilovskaya, 2010: 2)}$$

Though (6) as an exclamative denotes a non-degree reading and D'Avis (2002) successfully captures it, it falls short when it comes to the degree reading of exclamatives as in (9).

(9)   *How tall John is!*   (Chernilovskaya, 2010: 2)

(9) expresses the speaker's surprise in a situation where the speaker did not expect John to be 4 ft. tall but John appeared to be 6 ft. tall. However, the existing theory also allows (9) to be felicitously uttered in a scenario where the speaker expected John to be 4 ft. tall, however (s)he finds out that John is 3 ft. tall.[4] In such a case, the existing theory results in an undesirable prediction.

Chernilovskaya (2010) provides a solution to restrict this over-generalisation. She uses the downward monotone property of gradable predicates like *tall* [5] such that, $\forall w,x,d,d'(d' < d \wedge [\![\text{tall}]\!](w)(d)(x) \to [\![\text{tall}]\!](w)(d')(x))$. Now, uttering (9) is only felicitous in a context where John appears taller than the speaker expected. In this context, $\neg$ *answer*$_1$ includes a set of worlds where John is less than 6 ft. tall *i.e.*, the speaker's expectation entails the $\neg answer_1(w)$. And, the speaker knows $answer_2(w)$, *i.e.*, John is exactly 6 ft. tall.

Although Chernilovskaya's analysis accounts for both degree (9) and non-degree (6) instances of wh-exclamatives, it raises an interesting point where we use exclamatives as compliments (cf. Zanuttini and Portner, 2003). There are cases where the speaker's expectation is not negated. As an example we have the following scenario from Zanuttini and Portner (2003), where the speaker expected the house to be nice, uttering '*what a nice house!*' will not negate the speaker's expectation. The current system does not give an explanation for such instances. The present paper addresses this issue by accepting the concept of *Expectation Set* (ES) (Rett, 2011; Rett and Murray, 2013). The concept of ES is later elaborated on in this section.

Zanuttini and Portner (2003) view exclamatives as inherently scalar. The theory holds a two-part component *i.e.*, exclamatives denote a set of alternatives, just like questions. However, what distinguishes exclamatives from questions is that exclamatives are factive (Zanuttini and Portner, 2003). Following Sadock and Zwicky's (1985) interpretation of clause types *i.e.*, a clause type is a combination of grammatical form and conversational use, Zanuttini and Portner formalise a concept of *widening* which they claim to be the conversational use of an exclamative. Widening, as they claim, is responsible for the 'surprising' element of exclamative. It is a fundamental concept similar to a force of a proposition. The claim is that while the illocutionary force of an exclamative is exclaiming, the sentential force of an exclamative is widening [6]

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[4]In this context the use of (9) can be a case of rhetorical exclamative *i.e.*, unlike a standard exclamative where the asserted proposition is true, in a rhetorical one it would be false (Patricia, 2011).

[5]Chernilovskaya's analysis can be extended to capture absolute gradable adjectives (like *dry* in '*How dry the cake was!*' (Kennedy, 2007)) by reinterpreting them as a relative adjective.

[6]All clause types are associated with two forces *viz.* sentential force and illocutionary force. The former represents a sentence's form in a conversation (Chierchia and McConnell-Ginet, 1990), whereas the latter represents the intention of a speaker in an utterance (Searle, 1969). In the case of exclamatives, the sentential force is widening,

(Zanuttini and Portner, 2003). Widening is not hardwired in the syntax of an exclamative, it is rather acquired by pragmatic reasoning. The principle of widening is to widen the domain of quantification denoted by the wh-operator (10).

(10)   *Widening* = For any clause S containing $R_{widening}$, widens the initial domain of quantification for $R_{widening}$, D_1, to a new domain D_2, such that:
   a. $[\![S]\!]_{w,D_2,\prec} - [\![S]\!]_{w,D_1,\prec} \neq \emptyset$
   b. $\forall x \forall y[(x \in D_1 \ \& \ y \in (D_2 - D_1)) \rightarrow x \prec {}^7 y]$ (Zanuttini and Portner, 2003: 15)

The Zanuttini and Portner (2003) account on exclamatives also bases itself on the Karttunen set.[8] Let us follow the Paduan example in (11) to understand the framework of widening.

(11)   *che   roba che l   magna!*
        what stuff that he eats
        'The things he eats!'   (Zanuttini and Portner, 2003: 12)

(11) is uttered in a context where the speaker expresses surprise about the spicy peppers one eats. In this situation, the wh- *che* 'what' refers to a set of peppers such as poblanos, serranos, jalapeños that are ordered in an increasing likelihood scale[9] of spiciness in the initial domain or D_1. Now, $R_{widening}$, which is a quantificational operator, acts on this set of alternatives and widens it to a new domain D_2, where the widened D_2 set includes even spicier peppers such as habanero, Carolina Reaper *etc.* along with the previous ones. Zanuttini and Portner (2003) claim that widening the domain is only possible when the additional elements in the widened set are extreme on the relevant scale, and it is an essential meaning component of exclamative clauses.

Factivity acts as an active meaning component for exclamatives together with $R_{widening}$. The factivity component of exclamatives is drawn from the notion of Stalnaker's (1978) *Common Ground*. The following denotes factivity relation in exclamative clauses:

(12)   *Factivity* = For any clause S containing $R_{factivity}$ in addition to $R_{widening}$, every $p \in [\![S]\!]_{w,D_2,\prec} - [\![S]\!]_{w,D_1,\prec}$ is presupposed to be true.   (Zanuttini and Portner, 2003: 17)

The widening approach, though successful in capturing both degree and non-degree instances of wh-exclamatives, needs modification to extend the analysis in cross-linguistic contexts. While accounting for wh-exclamatives in Telugu and Kannada, Balusu (2019) points out that basing $R_{widening}$ on Karttunen set creates a problem for a data like (13).

(13)   *Heinz is amazed at who Uma married.*   (Balusu, 2019: 112)

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however, any clause can have exclaiming as its illocutionary force.

[7] $\prec$ is an ordering relation, with respect to which any domain of quantification is $\prec$-inclusive. That means, if x and y are in D and $x \prec z \prec y$, then z is also in D.

[8] The option for using Hamblin's (1973) and Groenendijk and Stokhof's (1984) denotations for questions is also open.

[9] In case of gradable context such as 'How tall John is!' the alternatives will be ordered in a degree scale.

(13) is uttered in a monogamous society where the speaker expresses surprise at Uma marrying Kiran since the speaker expected Uma to marry Ravi. In this context, following Karttunen set would already give us the true answer (*i.e.*, Ravi) in D_1, and therefore, widening D_1 to D_2 with respect to a context like (13) cannot take place. Balusu (2019) proposes an alternative resort to this. He suggests using Hamblin (1973) alternatives *i.e.*, questions denote a set of possible answers, instead of Karttunen's. Now, D_1 with respect to (13) will only include possible answers, and widening D_1 to D_2 will give us the true answer at which the speaker expresses surprise.

Balusu (2019) addresses a second problem in the existing theory. For data like (11) the wh-referents are ordered in an increasing likelihood scale for spiciness, as the context defined in (11) is a scalar context. However, (13) is uttered in a non-scalar context, where we are not attributing any scalar property such as tall, short, beautiful, ugly *etc.* to it. The ordering of the alternatives in the case of (13) thus remains undefined. In order to resolve this issue, Balusu (2019) embraces the concept of *Expectation Set* (ES), where the speaker's expectations are encoded as sets of possible worlds (Rett, 2011; Rett and Murray, 2013). Now, instead of wh-alternatives, the ordering will take place with respect to the propositional alternatives. Therefore, in (13) the ordering will be like this – 'Uma marrying Kiran' is less likely than 'Uma marrying Ravi'. With these modifications in hand, let us mention the revised versions of $R_{widening}$ and $R_{factivity}$ (Balusu, 2019: 121).

(14)   For any clause S containing an exclamative operator, widen the initial domain ES to a new domain D_2 such that:
     a. $[\![S]\!]_{w,D_2 \prec_{\text{likelihood/degree}}} - [\![S]\!]_{w,D_{\text{ES}} \prec_{\text{likelihood/degree}}} \neq 0$
     b. $\forall x \forall y [(x \in D_{\text{ES}} \ \& \ y \in (D_2 - D_{\text{ES}})) \rightarrow x \prec_{\text{likelihood/degree}} y]$ and;
     c. $\exists p \in [\![S]\!]_{w,D_2 \prec_{\text{likelihood/degree}}} - [\![S]\!]_{w,D_{\text{ES}} \prec_{\text{likelihood/degree}}}$ is presupposed to be true.

Accepting ES into our analysis also helps in resolving the issue of non-surprising exclamative[10] utterances noted earlier in this section. It suggests that in cases of the exclamative expressions (such as the one addressed earlier – 'what a nice house!') that do not express surprise, the ES is based on a normative scale *i.e.*, ES_{NORM}. When compared to the exclamatives expressing the speaker's surprise (such as the one in (13)), the ES is said to be based on the perspective of the speaker *i.e.*, ES_{SPKR}.

Our analysis uses this refined version of widening along with the exclamative operator (responsible for the semantics of exclamatives) introduced in Banerjee (2022), in analysing the multiple wh-exclamative instances of Bangla. Let us now look at the overview of multiple wh-exclamative utterances in Bangla.

3. Overview of Bangla wh-exclamatives

Bangla exhibits both type 1 or gradable/degree and type 2 or non-gradable[11] readings in wh-exclamative clauses. The wh-words in Bangla begin with a k-morpheme and, following Baner-

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[10]See Badan and Cheng (2015) for non-surprising exclamatives in Mandarin.

[11]Exclamatives that express surprise at the individual singled out by the wh-phrase are termed Type 1 (or i-level) exclamatives, and exclamatives that express surprise at the event that the wh-referent takes part in are termed Type 2 (or e-level) exclamatives. See Nouwen and Chernilovskaya (2015) for further discussion on type 1/2 exclamatives.

jee (2022), this paper also refers to Bangla wh-exclamatives as k-exclamatives.

While English licenses only 'what' and 'how' in its wh-exclamatives, Bangla uses 'where', 'who', 'whom', 'how$_{manner}$' apart from 'what' and 'how' in the same. The type 1 k-exclamatives are mostly uttered with *ki* 'what' and *koto* 'how', as in (15) where Rahul is more than 6 ft. tall and the speaker expresses surprise at his height. Other wh-words such as *ki*[12] 'what', *kake* 'whom', *ke* 'who', *kothae* 'where' etc., though typically appear to have type 2 readings, can also receive a degree interpretation depending on the context. Follow (16) – it can be uttered in a non-degree context where the speaker is surprised at the event of Rahul visiting the Himalayan region (as the speaker is aware that Rahul has altitude sickness). It can also be uttered in a context in which the speaker can express surprise that Rahul visited a dangerous place. In the latter context, (16) receives a degree interpretation whereas, in the former one it has only a type 2 or non-gradable reading. Albeit the typical type 2 k-words can occur in degree contexts, it does not work contrariwise *i.e.*, the type 1 *ki* and *koto* in exclamatives behave only as a modifier and does not occur in non-degree situations.

(15) *Rahul ki/koto   lomba!*
      Rahul what/how tall
      'How tall Rahul is!'

(16) *Rahul kothae gache!*
      Rahul where went
      '*Where Rahul went!'

We now take up the instances of multiple k-exclamatives in Bangla.

3.1. Evidence of multiple k-exclamatives

The range of k-words used in Bangla exclamative structures allows them to occur with each other in forming multiple wh-exclamatives. Consider the following examples from Bangla:

Type 1 Reading	Type 2 Reading

(17) *koto   loke   koto   khabar*
      how many person how much food
      khacche!
      eat.PROG.PRS.3
      Lit: 'How much food how many persons are eating!'

(18) *kon   chele kon   meye-ke*
      which boy   which girl.ACC
      biye   koreche!
      marriage do.PRF.PRS.3
      Lit: 'Which boy married which girl!'

(17) has a degree interpretation and conveys a quantity reading in a context where lots of people are eating in large quantities, and the speaker expresses surprise both at the amount of food and the number of people eating them. As opposed to it, the utterance in (18) expresses the speaker's surprise at a situation where couples who were never meant to be together got married, hence yielding a type 2 reading.

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[12]It is worth mentioning that Bangla has two types of *ki* 'what' in its exclamative structure (Banerjee, 2022). The type 1 *ki* does not occur in non-exclamative contexts (*Rastay ki jol jomeche* [✓*!/*✗*?*] 'How waterlogged the road has become!') and therefore Banerjee (2022) termed it *exclamatory modifier*, whereas type 2 *ki* and all the other k-words including the type 1 *koto* can occur in question clauses. When the type 2 *ki* occurs in a degree context yielding a degree reading, Banerjee (2022) argues that it modifies a null gradable predicate and has the following underlying structure: [*ki* $+\varnothing_{gr}$].

4. Syntax-semantics profile of multiple k-exclamatives

Parallel to multiple wh-questions, multiple wh-exclamatives also allow *superiority-obeying* and *superiority-violating* word orders. Both single-pair and pair-list readings are available for each word order in the case of Bangla type 2 multiple k-exclamatives. Follow Bhattacharya and Simpson (2007) for a similar observation in Bangla multiple wh-questions.[13] Reconsider the example in (18) which has *superiority-obeying* word order. It can also have a *superiority-violating* word order, as in (19).

Superiority-Obeying	Superiority-Violating

(18)   *kon chele kon meye-ke*   (19)   *kon meye-ke kon chele*
which boy which girl.ACC   which girl.ACC which boy
biye koreche!   *biye koreche!*
marriage do.PRF.PRS.3   marriage do.PRF.PRS.3
Lit:'Which boy married which girl!'   Lit: 'Which boy married which girl!'

Context 1: Surprise at Rajiv marrying Mira.**[OK]** (single-pair)   *Context 1:* Surprise at Rajiv marrying Mira.**[OK]** (single-pair)

Context 2: Surprise at Rajiv marrying Mira, and Rahul marrying Anu.**[OK]** (pair-list)   *Context 2:* Surprise at Rajiv marrying Mira, and Rahul marrying Anu.**[OK]** (pair-list)

Think about a context with three boys such as Rishi, Rahul, Arjun, and three girls such as Mira, Suman, and Riya. In a monogamous heterosexual society with respect to the data in (18) and (19), following Hamblin (1973) denotation of questions we will have the set of possible answers for its single-pair reading as in (20) for both *superiority-obeying* and *superiority-violating* cases. As for the pair-list readings, we get the sets in (21a) and (21b) for *superiority-obeying* and *superiority-violating* word order, respectively.[14]

(20)   **Single-Pair Reading**

$$\left\{ \begin{array}{l} \text{Rishi married Mira, Rishi married Suman, Rishi married Riya,} \\ \text{Rahul married Mira, Rahul married Suman, Rahul married Riya,} \\ \text{Arjun married Mira, Arjun married Suman, Arjun married Riya} \end{array} \right\}$$

(21)   **Pair-List Reading**

$$\text{a.} \left\{ \left\{ \begin{array}{l} \text{Rishi married Mira} \\ \text{Rishi married Suman} \\ \text{Rishi married Riya} \end{array} \right\}, \left\{ \begin{array}{l} \text{Rahul married Mira} \\ \text{Rahul married Suman} \\ \text{Rahul married Riya} \end{array} \right\}, \left\{ \begin{array}{l} \text{Arjun married Mira} \\ \text{Arjun married Suman} \\ \text{Arjun married Riya} \end{array} \right\} \right\}$$

$$\text{b.} \left\{ \left\{ \begin{array}{l} \text{Rishi married Mira} \\ \text{Rahul married Mira} \\ \text{Arjun married Mira} \end{array} \right\}, \left\{ \begin{array}{l} \text{Rishi married Suman} \\ \text{Rahul married Suman} \\ \text{Arjun married Suman} \end{array} \right\}, \left\{ \begin{array}{l} \text{Rishi married Riya} \\ \text{Rahul married Riya} \\ \text{Arjun married Riya} \end{array} \right\} \right\}$$

Up until this point, we have the interpretation of multiple k-questions which satisfy the condi-

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[13]Bangla *mostly* lacks superiority effects (see Bhattacharya and Simpson, 2007).

[14]A single-pair reading is formed as a set of propositions. As a requirement of the context, a single-pair reading allows us to have only one true answer from the set of possible answers. However, a pair-list reading is modelled as a set of sets of propositions, which allows us to have an answer from each set (cf. Kotek, 2018, 2016).

tions of *exhaustivity* and *uniqueness* presuppositions (Dayal, 2002).[15] These two presuppositions require that there be exactly one true answer for each set of questions in (21a) and (21b). Now in order to get the exclamative reading, we must allow domain widening. Widening the domain would allow including more unexpected couples, and the speaker will express surprise at one (in the case of single-pair reading) or at some (in the case of pair-list reading) of the couples.[16]

Adhering to the above-defined context, let us say that for the single-pair reading, the speaker expresses surprise at Rajiv marrying Mira, and for the pair-list reading the speaker expresses surprise at two couples *e.g.* Rajiv-Mira and Rahul-Anu, where Anu and Rajiv are added to the extended domains quantified by the wh-items.

The following sub-sections form a compositional profile of these multiple k-exclamative readings.

4.1. Analysing single-pair readings

We now look at the compositional analysis of the single-pair readings available for the *superiority-obeying* and *superiority-violating* cases. Below are the proposed syntax for both word orders with respect to the data in (18) and (19).
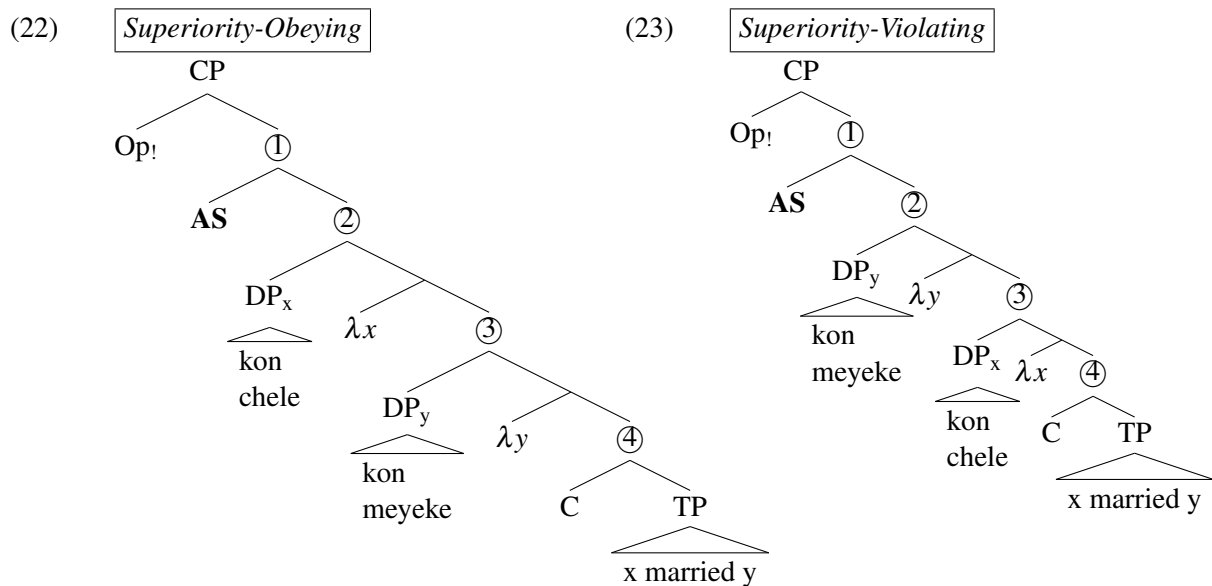
Though Bangla is a wh *in-situ* language on the surface, Simpson and Bhattacharya (2003)

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[15]**The presuppositions of a multiple question (Dayal, 2002):**

a.   Domain exhaustivity: every member of the set quantified over by the overtly moved wh is paired with a member of the set quantified over by the in-situ wh.

b.   Point-wise uniqueness (functionhood): every member of the set quantified over by the overtly moved wh is paired with no more than one member of the set quantified over by the in-situ wh.

[16]In the case of single-pair readings, Dayal's (1996) ANS-D operator ensures that we get one unique maximally true informative answer from the set of propositions. However, in the case of pair-list readings, the same answerhood operator fails to apply as the ANS-D can only apply to a set of propositions and **not** to a set of sets of propositions. Therefore, for analysing multiple k-exclamatives, we follow Kotek's answerhood operator that can recursively act on a set of propositions, a set of sets of propositions, and so on.

argued for an overt wh-movement to [Spec CP] in Bangla. While viewing multiple wh excla-matives, we follow the intuition that Bangla is a multiple wh-fronting language as opposed to English (Bhattacharya and Simpson, 2007).[17],[18] Therefore, in (22) both the wh-phrases overtly move to the CP edge retaining the *superiority-obeying* word order. However, in the case of *superiority-violating* word order, we argue along the line of Bhattacharya and Simpson (2007) that the overtly raised object wh-phrase over the subject wh-phrase can be seen as a case of pragmatic prominence *i.e.*, the object wh-phrase being the centre of interest can lead us to having *superiority-violating* word order.

Now, let us look at the crucial steps of composition for (22) in (24):

(24) a. $[\![④]\!]^o = \lambda w.x$ married y in w ; $[\![④]\!]^f = \{[\![④]\!]^o\} = \{\lambda w.x$ married y in $w\}$
      b. $[\![③]\!]^f = \{\lambda w.x$ married y in $w : y \in$ girl$\}$
      c. $[\![②]\!]^f = \{\lambda w.x$ married y in $w : y \in$ girl$, x \in$ boy$\}$
      d. $[\![\textbf{AS } ②]\!]^o = [\![②]\!]^f$; $[\![\textbf{AS } ②]\!]^f = \{[\![\textbf{AS } ②]\!]^o\}$
      e. $[\![①]\!]^o = [\![②]\!]^f = \{\lambda w.x$ married y in $w : y \in$ girl$, x \in$ boy$\}$

We follow a Kotek (2016, 2018)-style semantics for composing both single-pair and pair-list readings of the Bangla multiple k-exclamatives. In Kotek's system, **AS** is not the complemen-tiser. Rather, it is the question operator on the clausal spine responsible for the interrogative semantics. Kotek's ALTSHIFT (**AS**) operator needs to be introduced in the syntax. This **AS** converts the focus value of the set into its ordinary value.[19] It is the type-flexible version of the Q operator (see Beck, 2006; Beck and Kim, 2006). The complementiser C remains se-mantically vacuous in her system. At the compositional level, node ④ represents the open proposition '*x* married *y*'. In the next few steps, the free variables become bound and pointwise composed with the denotation of the wh-phrases in (24b) and (24c), resulting in the focus value of the set of propositions in node ②. Follow (24c). The **AS** operator converts the focus value of node ② and returns the ordinary value of it in node ①. ① corresponds to the flat set outlined in (20) in the single-pair context. At the next step, the exclamative operator Op₁ will take the ordinary value obtained via PFA in node ① and gives us the semantics of exclamatives. Before looking at the semantics of Op₁, let us look at the main compositional steps in (25) for the *superiority-violating* word order (23) in a single-pair reading.

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[17]As argued in Bhattacharya and Simpson (2007), in Bangla multiple wh-questions, the wh-phrases are overtly moved to a Spec CP. The evidence follows from the embedded multiple wh-questions in Bangla, where the appar-ently wh *in-situ* phrases must move to the matrix CP edge.

(i) a. **tumi **ke**ᵢ bolle [tᵢ **kothay** thakbe]?*
         you who say   where will-live/stay
     b. *tumi **ke**ᵢ **kothay**ₖ bolle [tᵢ tₖ thakbe]?*
         you who where said   will-live/stay
         'Who did you say will stay where?'   (Bhattacharya and Simpson, 2007: 182)

[18]On a contra view in order to keep Bangla as SOV, one can possibly argue that due to pragmatic prominence, a [iTop] feature is present on the wh-word (it may be the subject or the object wh-word), that will be fronted over the other, and a strong [uTop*] feature is on the higher Top projection. Due to this one may argue that the movement happens.

[19]*The semantics of the* ALTSHIFT (**AS**) *operator* is as follows:

(i) a. $[\![\text{ALTSHIFT } \alpha_\sigma]\!]^o = [\![\alpha]\!]^f$
     b. $[\![\text{ALTSHIFT } \alpha_\sigma]\!]^f = \{[\![\text{ALTSHIFT} \alpha_\sigma]\!]^o\}$ $(\sigma \in \{\langle st,t \rangle, \langle \langle st,t \rangle, t \rangle, ...\})$ (Kotek, 2018: 32)
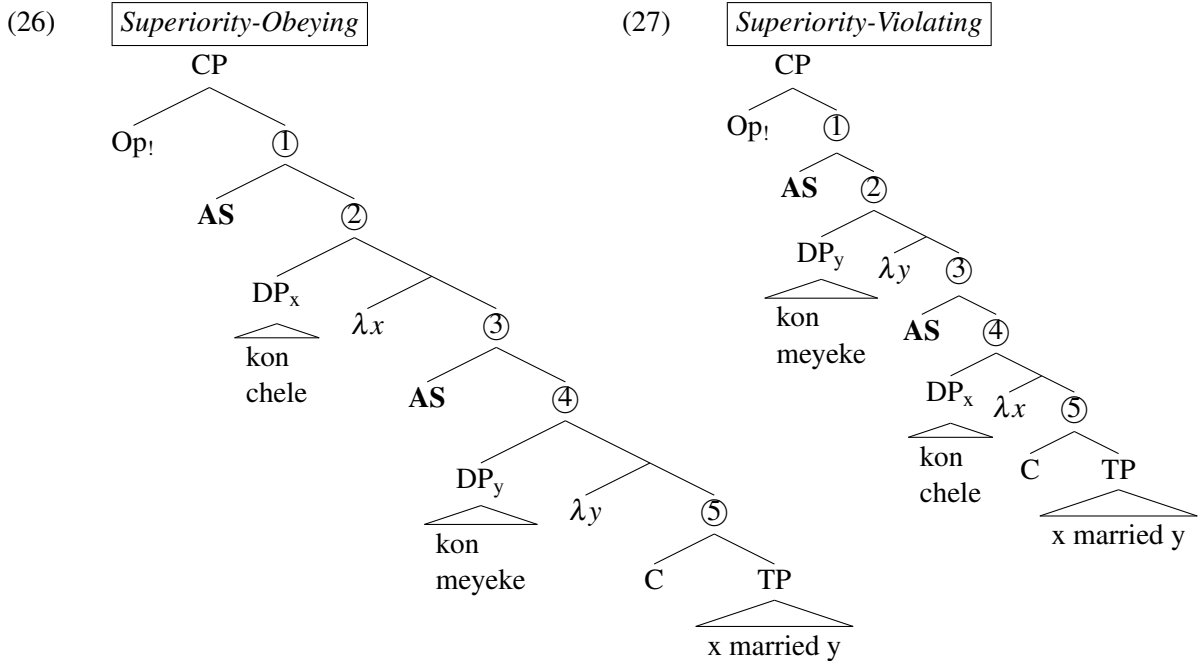
(25)   a. $[\![④]\!]^o = \lambda w.x$ married y in w ; $[\![④]\!]^f = \{[\![④]\!]^o\} = \{\lambda w.x$ married y in $w\}$
       b. $[\![③]\!]^f = \{\lambda w.x$ married y in $w : x \in$ boy$\}$
       c. $[\![②]\!]^f = \{\lambda w.x$ married y in $w : x \in$ boy$, y \in$ girl$\}$
       d. $[\![\mathbf{AS}\ ②]\!]^o = [\![②]\!]^f$; $[\![\mathbf{AS}\ ②]\!]^f = \{[\![\ \mathbf{AS}\ ②]\!]^o\}$
       e. $[\![①]\!]^o = [\![②]\!]^f = \{\lambda w.x$ married y in $w : x \in$ boy$, y \in$ girl$\}$

The alternatives in both cases are composed pointwise resulting in a flat set of type $\langle st,t \rangle$ (like simplex wh-questions), and a single **AS** operator takes the focus value of the entire set and returns us the ordinary value of the set, yielding a single-pair reading.

Now, let us look at the compositional steps required to derive the pair-list readings.

4.2. Analysing pair-list readings

In the instance of pair-list readings, the *superiority-obeying* and *superiority-violating* word or-der follow the same mechanism used for single-pair readings. The only noticeable difference associated with pair-list readings following Kotek (2018) is that they allow each wh-phrase to be interpreted individually by the **AS** operators. Therefore, in pair-list readings, we have a second **AS** operator. This permits the formation of the set of sets of answers (of type $\langle \langle st,t \rangle, t \rangle$) necessary to produce the pair-list readings. The following are the proposed structures for the pair-list denotations for *superiority-obeying* and *superiority-violating* word orders:

(26)   Superiority-Obeying   (27)   Superiority-Violating

Analysing (26) compositionally, we have the following key steps of derivations in (28):

(28)   a. $[\![⑤]\!]^o = \lambda w.x$ married y in w ; $[\![⑤]\!]^f = \{[\![⑤]\!]^o\} = \{\lambda w.x$ married y in $w\}$
       b. $[\![④]\!]^f = \{\lambda w.x$ married y in $w : y \in$ girl$\}$
       c. $[\![\mathbf{AS}\ ④]\!]^o = [\![④]\!]^f$; $[\![\mathbf{AS}\ ④]\!]^f = \{[\![\ \mathbf{AS}\ ④]\!]^o\}$
       d. $[\![③]\!]^o = [\![④]\!]^f = \{\lambda w.x$ married y in $w : y \in$ girl$\}$;

$$\llbracket ③ \rrbracket^f = \{\{\lambda w.x \text{ married } y \text{ in } w : y \in \text{ girl}\}\}$$

e. $\llbracket ② \rrbracket^f = \{\{\lambda w.x \text{ married } y \text{ in } w : y \in \text{ girl}\} : x \in \text{ boy}\}$

f. $\llbracket \textbf{AS } ② \rrbracket^o = \llbracket ② \rrbracket^f; \llbracket \textbf{AS } ② \rrbracket^f = \{\llbracket \textbf{ AS } ② \rrbracket^o\}$

g. $\llbracket ① \rrbracket^o = \llbracket ② \rrbracket^f = \{\{\lambda w.x \text{ married } y \text{ in } w : y \in \text{ girl}\} : x \in \text{ boy}\}$

The pointwise derivation is similar to the one in (24) and (25), but with a crucial difference that the wh-phrases are individually interpreted by two **AS** operators here. Following Rooth's (1985; 1992) notion of non-focused nodes, we assume that the focus value of ③ is exactly the ordinary value of it in a singleton. This node composes with the other wh-phrase by pointwise predicate abstraction resulting in the set of sets of alternative propositions in node ①. The difference in the pointwise composition of (26) and (27) can be spotted in the denotation of the set of sets of possible answers which is grouped by the wh-phrase that occurs in the higher position in syntax. Therefore, in (27), node ③ has the following focus value in (29a), and moving up further, node ① will have the following interpretation in (29b).

(29)   a. $\llbracket ③ \rrbracket^f = \{\{\lambda w.x \text{ married } y \text{ in } w : x \in \text{ boy}\}\}$

b. $\llbracket ① \rrbracket^o = \llbracket ② \rrbracket^f = \{\{\lambda w.x \text{ married } y \text{ in } w : x \in \text{ boy}\} : y \in \text{ girl}\}$

The derivations in (28) and (29) yield a set of sets of answers to form the pair-list denotations for the *superiority-obeying* and *superiority-violating* instances. In the case of (28), node ① corresponds to the pair-list set outlined in (21a), and the same in (29) corresponds to the pair-list set outlined in (21b).

Let us now proceed to explain the semantic tool that is liable for the interpretation of exclamative clauses.

4.3. On the semantics of Op$_!$

As we have the single-pair and the pair-list denotations for both *superiority-obeying* and *superiority-violating* instances, we can now move on to obtain the exclamative interpretation. The exclamative operator Op$_!$ introduced on the clausal spine is responsible for domain widening and giving the semantics of exclamatives. Before we read out the semantic denotation of Op$_!$, we must form an answerhood operator. This answerhood operator is deemed to act on the ES, in order to pick out the maximal true informative answer. As we are following the semantics proposed in Kotek (2018) in order to analyse multiple wh-exclamatives, it seems feasible to opt for the answerhood operator formalised in Kotek (2018) to analyse multiple wh-questions in English. Unlike Ans-D (Dayal, 1996) that only applies to a flat set, this answerhood operator introduced in Kotek (2018) can recursively apply to a set of sets of answers. This captures both the single-pair and pair-list readings available for multiple wh-questions. (30) shows us a recursive definition for generalised Ans. As mentioned in Kotek (2018), this Ans can act on a set of propositions iff the set is answerable, *i.e.*, if it has a maximally true informative answer.[20]

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[20]*A recursively defined filter on question meanings using* Ans (Kotek, 2018: 39):

(i) $\llbracket \text{Answerable} \rrbracket (P_{\langle st,t \rangle}) = \exists q : \llbracket \text{Ans} \rrbracket (P) = q.P$

$\llbracket \text{Answerable} \rrbracket (K_{\langle \sigma, t \rangle}) = \forall P_\sigma \in K (\exists q : \llbracket \text{Ans} \rrbracket (P) = q).K$

$(\sigma \in \{\langle st, t \rangle, \langle \langle st, t \rangle, t \rangle, ...\})$

(30)   a. $[\![\textsc{Ans}]\!](P_{\langle st,t\rangle}) = \lambda w.\mathrm{Max}_{\mathrm{inf}}(P)(w)$
        where $\mathrm{Max}_{\mathrm{inf}}(P)(w) = \iota p \in P$, such that $w \in p$ and $\forall q \in P(w \in q \to p \subseteq q)$
    b. $[\![\textsc{Ans}]\!](K_{\langle \sigma,t\rangle}) = \lambda w.\bigcap P_\sigma \in K([\![\textsc{Ans}]\!](P)(w))$
        $$[\text{i.e., } \lambda w.\lambda w'.\forall P_\sigma \in K([\![\textsc{Ans}]\!](P)(w)(w'))]$$
        $$(\sigma \in \{\langle st,t\rangle, \langle\langle st,t\rangle,t\rangle, ...\}) \quad \text{(Kotek, 2018: 38)}$$

Though introducing generalised Ans to our semantics for Op! will work in the case of single-pair readings of multiple k-exclamatives, it will however overgeneralise things in the case of pair-list readings as in (31) (obtained by widening (21a) or the ES) where Rajiv and Anu are new additions, whom the speaker does not find worthy of marriage. Now, maybe, the speaker finds the actual couples are Rajiv-Mira, Arjun-Suman, Rahul-Anu, and Rishi-Riya. Here the amazement comes only from the first and third couples, whereas the second and last one was expected by the speaker. The speaker presupposed that there would be three distinct answers from the three question sets in (21a), but it did not come out to be true. In such a scenario, the speaker will not express surprise at each true answer picked out by the answerhood operator in the pair-list readings. The bold-faced propositions below are those answers that can instigate the speaker's surprise.

(31) $\left\{ \left\{ \begin{array}{l} \text{Rishi married Mira} \\ \text{Rishi married Suman} \\ \text{Rishi married Riya} \\ \textbf{Rishi married Anu} \end{array} \right\}, \left\{ \begin{array}{l} \text{Rahul married Mira} \\ \text{Rahul married Suman} \\ \text{Rahul married Riya} \\ \textbf{Rahul marrying Anu} \end{array} \right\}, \left\{ \begin{array}{l} \text{Arjun married Mira} \\ \text{Arjun married Suman} \\ \text{Arjun married Riya} \\ \textbf{Arjun married Anu} \end{array} \right\}, \left\{ \begin{array}{l} \textbf{Rajiv married Mira} \\ \textbf{Rajiv married Suman} \\ \textbf{Rajiv married Riya} \\ \text{Rajiv married Anu} \end{array} \right\} \right\}$

Therefore we need to restrict the generalised Ans operator with respect to exclamative context. Following Grice's (1975) maxim of quantity, which suggests not to contribute more information than is needed in a context, will exactly give us those answers required for the exclamative context. Hence forcing an informativity restriction on the $\mathrm{Max}_{\mathrm{inf}}$ operator can be done by viewing the discourse topic as Question Under Discussion (QUD), the notion of which dates back to Roberts (2012). QUD is a semantic question corresponding to the current discourse topic (Roberts, 2010; Simons et al., 2010). QUDs can be overt questions or they can remain implicit in discourse. A QUD can be addressed by complete or partial answers or by another question that entails the complete or partial answer to it. We propose that while dealing with exclamative clauses, there will always be an implicit QUD relative to the context c, *viz.* $!\mathrm{QUD}^c$ which is defined as the following:

(32) $!\mathrm{QUD}^c$: What surpasses the norm or the speaker's expectation in context c?

The argument in favour of $!\mathrm{QUD}^c$ is – only that maximally informative true answer will be picked out which is not more informative than is needed for answering the !QUD in c. Hence, pragmatically modifying the $\mathrm{Max}_{\mathrm{inf}}$ operator with respect to $!\mathrm{QUD}^c$ gives us the following denotation in (33). This $\mathrm{Max}_{\mathrm{infQUD_{Excl}}}$ operates on the set of propositions and returns the unique maximal true answer which is most informative for the current discourse topic, given there is an answer that is true and surpasses the speaker expectation or norm. And whenever there is no informative true answer relevant to the current discourse topic, the operator results in giving the set of all possible words W (*i.e.*, trivial; non-informative).

(33) $\text{Max}_{\text{inf}!\text{QUD}^c}(Q)(w) = \begin{cases} \iota p[p(w) = 1 \land p \text{ is not more informative than is needed for answering }!\text{QUD}^c \land \forall q \in Q \, [[q(w) = 1 \land q \leq_{\text{inf}} p \text{ for answering the }!\text{QUD}^c] \to p \subseteq q]] & \text{if } \exists q : [\![\text{Ans}]\!](Q) = q \land q \text{ is informative for answering the }!\text{QUD}^c. \\ \\ W & \text{otherwise} \end{cases}$

Now, replacing the Max_{inf} operator with $\text{Max}_{\text{inf}!\text{QUD}^c}$ in the generalised Ans, we get the following revised notion of generalised Ans as in (34) that is sensitive to exclamative readings.

(34)   **Generalised Ans relative to $!\text{QUD}^c$ ($\text{Ans}^{!\text{QUD}^c}$):**
a. $[\![\text{Ans}^{!\text{QUD}^c}]\!](P_{\langle st,t \rangle}) = \lambda w.\text{Max}_{\text{inf}!\text{QUD}^c}(P)(w)$
b. $[\![\text{Ans}^{!\text{QUD}^c}]\!](K_{\langle \sigma,t \rangle}) = \lambda w. \bigcap \{p : \forall P_\sigma \in K([\![\text{Ans}^{!\text{QUD}^c}]\!](P)(w)) = p\}$
     $(\sigma \in \{\langle st,t \rangle, \langle \langle st,t \rangle, t \rangle, ...\})$

This generalised Ans operator will act on the widened set (D_2) and would pick out only the maximally true surprising answer(s). As we dealt with all the relevant issues, we are now ready to formalise the semantics of the exclamative operator $\text{Op}_!$ as in (35) which is accountable for the interpretation of exclamative readings.

(35) $[\![\text{Op}_!]\!]^{c,w} = \lambda Q_{\langle \langle st,t \rangle, t \rangle} : \exists p \in (\bigcup [\![Q]\!]_{w,D_2^{wh1},D_2^{wh2},...} - \bigcup [\![Q]\!]_{w,D_{ES_{\text{SPKR/NORM}}}^{wh1}, D_{ES_{\text{SPKR/NORM}}}^{wh2},...})[p(w)$
     $= 1].\{p : p = \text{Ans}^{!\text{QUD}^c}([\![Q]\!]_{w,D_2^{wh1},D_2^{wh2},...}) \land p \notin \bigcup [\![Q]\!]_{w,D_{ES_{\text{SPKR/NORM}}}^{wh1}, D_{ES_{\text{SPKR/NORM}}}^{wh2},...}\}$

With this definition of the exclamative operator, let us now elaborate on the type 2 example of multiple k-exclamative. The propositions in the case of type 2 readings are always ordered on a likelihood scale. The presupposition component of the $\text{Op}_!$ semantics ensures the factivity criterion associated with wh-exclamatives. Let us now work on the set defined in (21a). $\text{Op}_!$ works on this set, and widening (21a) would give us the set in (31). Now, the $\text{Ans}_{!\text{QUD}^c}$ operator would pick out only that maximally informative true proposition that contains nothing more informative than is needed for answering the $!\text{QUD}^c$. In a context like (18), this type of proposition will be the set of worlds compatible with only Rajiv marrying Mira and Rahul marrying Anu, but not with Arjun marrying Suman and Rishi marrying Mira. The same mechanism would be applied in the pair-list reading available for *superiority-violating* word order.

The problem arises when we try to accommodate the single-pair readings because the generalised union needs a family of sets to act on. Therefore, in the single-pair case, we must first type-shift it from $\langle st,t \rangle$ to $\langle \langle st,t \rangle, t \rangle$. Here we tap into the **Ident** type-shifter (cf. Partee, 1986; Uegaki, 2019) to transform the flat set into a singleton. It is defined as in what follows:

(36)   **Ident** $= \lambda Q_{\langle st,t \rangle}.\{Q\}$

Now, in a single-pair context, the set defined in (20) is the equivalent ES, and widening (20) would include all the new bold propositions in the D_2. The Ans operator in $\text{Op}_!$ will act on D_2 picking out the maximally true surprising answer relevant to the context. Recall context 1 (which was a single-pair context) in (18) where the maximally true answer was 'Rajiv married Mira'.

4.4. Extending the analysis to type 1 readings

In this section, we move ahead with the type 1 instance. The type 1 instance of the multiple k-exclamative in (17) will be analysed following the same mechanism used above. As described earlier, (17) is uttered in a situation where the speaker expresses surprise at the amount/quantity of people and food. The k-words with reference to (17), therefore will be interpreted in the following ways:

(37) a. $[\![\text{koto loke}]\!]^f = \{d : d$ is the number of people$\}$; $[\![\text{koto loke}]\!]^o = $ undefined
      b. $[\![\text{koto khabar}]\!]^f = \{d' : d'$ is the degree denoting the quantity of food$\}$;
          $[\![\text{koto khabar}]\!]^o = $ undefined

A pointwise composition would give us the following set for type 1 k-exclamative sentence uttered in (17). The alternative propositions in the ES of type 1 instances are ordered relative to a degree scale.

(38) $$\left\{ \begin{array}{l} d \text{ number of people are having } d' \text{ amount of food} \\ d_1 \text{ number of people are having } d'_1 \text{ amount of food} \\ \qquad \dots \end{array} \right\}$$

Now, widening this set would include higher degrees of both food and people at which the speaker can express surprise. As widening (38) would result in a flat set, application of the exclamative operator Op$_!$ would require the set to be type-shifted using the **Ident** operator. The ANS would pick up the surprising true answer relevant to the context from the widened set.

5. Conclusion

Bangla multiple wh-exclamatives show both type 1 (or degree) and type 2 (or non-degree) readings. Since Bangla uses a variety of k-words in its exclamative structures, it also shows a combination of k-words in its multiple wh-exclamative structures, yielding single-pair and pair-list readings in both *superiority-obeying* and *superiority-violating* word-orders.

As the diverse nature of k-exclamatives is introduced in this paper, we see that they cannot be analysed along the lines of Rett's degree approach. We, therefore, base our analysis on the question approach and precisely follow the widening account (Zanuttini and Portner, 2003). The course of the analysis, however, uses the modifications in the existing widening approach, mentioned in Balusu (2019) for analyzing wh-exclamatives in Telugu and Kannada.

For the syntax of multiple k-exclamatives, we follow the insights of Bhattacharya and Simpson (2007) where the wh-phrases are overtly fronted in Bangla. At the level of compositional analysis, we follow Kotek (2016, 2018) in positioning the **AS** (or ALTSHIFT) operator on the clausal spine. This **AS** operator is accountable for the interrogative semantics. The **AS** operator converts the focus value of the set of alternatives to its ordinary value, upon which the exclamative operator Op$_!$ acts, giving us the semantics of multiple k-exclamatives and exclamatives as a whole. The answerhood operator posited in the semantics is mainly drawn from Kotek's generalised ANS used for multiple wh-questions. But, the answerhood operator in Op$_!$ is pragmatically modified under the concept of QUD (Roberts, 2012) so that it generates those true answers relevant to the exclamative contexts.

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