Ki – the Interrogative Disjunction Morpheme in Bangla

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ABSTRACT

The main aim of the paper is to study the behavior of the particle 'ki' in both polar and alternative questions in the Indo-Aryan language Bangla. In the paper, it is observed that 'ki' is a polar question particle, and also surfaces as a disjunction marker in alternative questions. This observation generates the claim that in Bangla there is an identity relation between the polar question particle and interrogative disjunction morpheme. This further leads to the proposal that there is a disjunction operator in both polar and alternative questions in Bangla, and 'ki' is the lexical realization of that operator.

1 Introduction: the problem

The paper starts with exploring the number of ways in which polar questions are formed in Bangla, in section (2). Then, it proceeds to show that polar questions in Bangla indicate disjunction in the answer space, in section (3). This is argued in the background of Beizma and Rawlin's (2012) analysis of polar and alternative questions in the light of Question Under Discussion approach. In section (3), we also find out that in Bangla, like Hindi, the meaning of polar questions without PQP differs from the ones with PQP. In section (4), we notice that the polar question particle 'ki' surfaces as interrogative disjunction marker. There, we try to analyze the relationship between question particle and disjunction marker. Section (5) further looks into the properties of 'ki' in comparison with another interrogative disjunctive marker 'na' (underlying 'kina') in Bangla. In section (6), we conclude the paper.

2 ki - the Polar Question Particle in Bangla

In Bangla, polar questions can be formed in two ways. One way is where the speaker uses rising intonation at the end of a declarative clause, cf. (1). The other way is where the speaker uses polar question particle besides the prosody, cf. (2). This has already been noted by Bhadra (2017) and Syed & Dash (2017).

- (1) Ram chaa kha-b-e↑ Ram tea eat-FUT-3 'Will Ram have tea?'
- (2) Ram ki chaa kha-b-e↑ Ram PQP tea eat-FUT-3 'Will Ram have tea?'

The other Indo-Aryan languages like Hindi and Assamese also form polar question in the aforementioned two ways, as shown by Bhatt and Dayal (2014, 2020) in Hindi and Rajkhowa (2018) in Assamese.

The Bangla PQP 'ki' in (2) is homophonous to the thematic question word 'ki' (what), cf. (3), as shown in Bhadra (2017). This is not exceptional to Bangla, even in Hindi the PQP 'kya:' is homophonous to the thematic question word 'kya:', as shown in Bhatt and Dayal (2014, 2020).

(3) Ram ki kha-b-e? Ram what eat-FUT-3 'What will Ram have?'

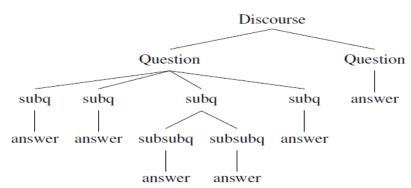
The syntactic position of thematic 'ki' in Bangla varies from the syntactic position of the PQP 'ki.' The thematic Q word occurs in pre-verbal position in (3), and the PQP can occur in multiple positions inside a clause, cf. (4). In Bangla, the non-occurrence of PQP 'ki' in the clause initial position in (4) indicates that 'ki' requires elements to be cliticized to its left (noted in Bhadra (2017), and Syed and Dash (2017)).

The multiple syntactic positions of the PQP in Bangla affect the meaning of polar questions. In fact, the meaning of the polar question without PQP differs from the one with PQP in Bangla. But there is also a similarity that is found in the interpretation of the polar questions with and without PQP. Both types of questions indicate disjunction in the answer space. This will be discussed in detail in the next section.

3 Disjunction in polar questions in Bangla

The meaning of a question can be understood from its range of possible answers. In this paper, we will investigate the meaning of the Bangla polar questions in the background of Beizma and Rawlin's (2012) Question Under Discussion approach. B&R presents a discourse-based analysis of polar and alternative questions. They state that polar questions involve one alternative semantically and the addressee must choose between the given alternative and some salient, unstated alternatives. Whereas alternative questions present an exhaustive set of alternatives and the addressee has to choose from that closed set of alternatives. This analysis of polar and alternative questions follows from I(mmediate) Q(uestion) U(nder) D(iscussion) based theory of discourse (Roberts 1996, Buring 2003, Beaver and Clark 2008). This can be well explained under the D(iscourse) tree, as shown in Beizma and Rawlin (2012, p. 30, ex. 60) and originally proposed by Buring (2003), cf. (5).





The D-tree shows that there is a 'Big Question' (termed by Roberts 1996), under which there are sub-questions (which are either polar or alternative questions). The speaker utters a sub-question which could be answered by a discourse participant. The addressee must answer the IQUD, which is the most current question. To answer the IQUD, the addressee develops different strategies, and the different strategies correspond to different sub-questions, which in turn will give answer to the 'Big Question.' Based on our understanding of D-tree, IQUD, and 'Big Question,' we can now try to explain the meaning of polar question in Bangla and find out how does polar questions indicate disjunction in answer space.

The polar question in (6) will derive the possible responses from the addressee in (6A) – (6C). The question in (6) presents one alternative to the addressee. The addressee responds by either saying 'yes' as in (6A), and thus chooses the given alternative, or by saying 'no' and then opt for another alternative ((6B) replacing the object and (6C) replacing the subject) that is not directly mentioned in the question (6), and remains implicit in the discourse. So, when the addressee chooses (6B) as the response, he answers the 'Big Question' in (7). If the addressee chooses (6C) as the response, then he answers the 'Big Question' in (8).

- (6) Ram chaa kha-b-e↑ Ram tea eat-FUT-3 'Will Ram have tea?'
 - A. hyan yes

- B. na:, coffee kha-b-e no coffee eat-FUT-3 'No, he will have coffee.'
- C. na:, Shyam kha-b-e no Shyam eat-FUT-3 'No, Shyam will have.'
- (7) Ram ki kha-b-e? Ram what eat-FUT-3 'What will Ram have?'
- (8) ke chaa kha-b-e? who tea eat-FUT-3 'Who will have tea?'

In (6), we have dealt with polar question without PQP. Now let us observe the responses that a polar question with PQP derives. The question in (9), like the one in (6), gives one alternative to the addressee. The addressee can either say 'yes' as in (9A), and thus choose the given alternative, or he can say 'no', and then opt for another alternative, replacing the object (9B). But he cannot opt for the alternative replacing the subject, as is evident from the infelicitous data in (9C). When the addressee chooses (9B), he answers the 'Big Question' in (10).

- (9) Ram ki chaa kha-b-e↑ Ram PQP tea eat-FUT-3 'Will Ram have tea?'
 - A. hyan yes
 - B. na:, coffee kha-b-e no coffee eat-FUT-3 'No, he will have coffee.'
 - C. #na:, Shyam kha-b-e no Shyam eat-FUT-3 'No, Shyam will have.'
- (10) Ram ki kha-b-e? Ram what eat-FUT-3 'What will Ram have?'

Based on our observation of the data in (9), we can understand the element that occurs to the right of the PQP 'ki' is questioned and not the element to the left of the PQP, which is evident from the felicitous and infelicitous responses in (9B) and (9C) respectively. Similar behavior of PQP 'kya:' has been noticed in Hindi by Beizma et al (2018). They analyze PQP 'kya:' as a focus sensitive operator, which further restricts the set of possible answers in a given context. They suggest that the element to the immediate right of 'kya:' is questioned. Later, Bhatt and Dayal (2020) shows that in fact every element to the right of 'kya:' can be questioned. However, the element to the left of 'kya:' can also be questioned if that element bears stress (noted in Beizma et.al 2018). In Bangla also, all the elements that occur to the right of the PQP 'ki' are questioned. Thus, both the direct and indirect objects in (11), which are occurring to the right of 'ki', can be replaced, cf. (11A) where the alternative replaces the indirect object and (11B) where the alternative replaces the direct object. The element to the left of 'ki' can also be questioned if it is marked with focus, cf. (12).

(11) Ram ki cup-e chaa kha-ch-e?
Ram PQP cup-LOC tea eat-PROG-3
'Is Ram having tea in a cup?'

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A.
                 Ram
                          mug-e
                                           chaa
                                                   kha-ch-e
        na:,
                 Ram
                         mug-LOC
                                           tea
                                                   eat-PROG-3
        no
        'No, Ram is having tea in a mug.'
B.
                 Ram
                         cup-e
                                           coffee
                                                   kha-ch-e
        na:,
                                                   eat-PROG-3p
                 Ram
                          tea-LOC
                                           coffee
        'No, Ram is having coffee in a cup.'
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(12) Ram ki chaa kha-b-e↑
Ram PQP tea eat-FUT-3rd
'Will Ram have tea?'

A. na:, Shyam kha-b-e no Shyam eat-FUT-3 'No, Shyam will have.'

Our claim that the PQP 'ki' questions only the elements to it right can be well established with the occurrence of preverbal 'ki.' The possible answers for the question in (13), where 'ki' occurs before the verb, can either be 'yes' as in (13A) or 'no' as in (13B), and nothing else as (13C) shows, as the PQP 'ki' in (13) questions only the happening of the verb.

(13) Ram chaa ki kha-ch-e?
Ram tea PQP eat-PROG-3
'Is Ram having tea?'

A. hyan yes

B. na:

C. #na:, Ram coffee kha-ch-e no Ram coffee eat-PROG-3 'No, he is having coffee.'

So far, we have noticed that in Bangla, like Hindi, there is a difference between the polar questions with PQP and without PQP. The question without PQP generates possible responses where every element is questioned as in (6) and the question with PQP gives rise to those answers where only the elements to the right of the PQP are questioned (see (9), (11), and (13)). The element to the left of the PQP can also be questioned if it bears stress as in (12). In this section, we have also noted one similarity between the polar questions without PQP and the ones with PQP. The polar questions, irrespective of the presence of PQP, indicate disjunction in the answer space, which is evident from the set of alternative answers the questions in (6), (9), and (11) have generated.

4 ki in alternative questions in Bangla

The polar question particle 'ki' can also surface as an interrogative disjunction marker. Let us observe the data in (14) where 'ki' disjoins two polar questions.

(14)chaa kha-ch-e ki coffee kha-ch-e? Ram Ram eat-PROG-3 KI Ram tea Ram coffee eat-PROG-3 'Is Ram having tea or coffee?'

In (14), the occurrence of 'ki' as [+Q] disjunction marker becomes evident from the data in (15) and (16). In (15), two declarative clauses are disjoined by the Boolean disjunction marker 'ba.' The [-Q] disjunction in (15) can be [+Q] disjunction when 'ba' is replaced by 'ki', cf. (16).

- (15)Ram Sekh-e ba Ram naach Sekh-e gaan Ram learn-3 DISJ Ram dance learn-3 song 'Ram learns singing or dancing.'
- (16)Sekh-e Sekh-e Ram gaan ki Ram naach Ram song learn-3 ΚI Ram dance learn-3 'Does Ram learn singing or dancing?'

'ki' can also occur as [+Q] disjunction marker in AltQvN or polar alternative constructions, as in (17) as well as in 'or something else' construction, as in (18).

- (17)coffee kha-b-e na:? Ram chaa kha-b-e ki Ram coffee eat FUT-3 Ram tea eat-FUT-3 ΚI Ram no 'Will Ram have tea or not?'
- (18)Ram chaa kha-b-e ki Ram annvo kichu kha-b-e? Ram tea eat-FUT-3 ΚI Ram different something eat-FUT-3 'Will Ram have tea or something else?'

Following Bartels (1997) analysis of the properties of alternative questions and as also mentioned in Bhatt and Dayal (2020), I suggest that the alternative questions in (14), (16), (17), (18) have the following features, a pitch accent on each disjunct, a prosodic break between the disjuncts, and a final fall.

Here, we assume that there is an identity relationship between the PQP 'ki' and the interrogative disjunction marker 'ki.' The link between the QP and disjunction morpheme has already got its first mention in Jayaseelan (2008). He shows in languages like Malayalam, Sinhala, and Japanese, that the disjunctive morpheme also appears as a question particle. Amritavalli (2003) also points out the same in Kannada. Jayaseelan states that the question particle, in these languages, is the lexical realization of the disjunction operator. The argument he puts forward for the QP to be the lexical realization of the disjunction operator is that question words indicate disjunction in the answer space. In the line of Baker's (1970) claim that "question particle = question operator", Jayaseelan (2008) proposes a "three-way identification" (19) for the languages where QP and disjunction morpheme are homophonous.

(19) question particle = question operator = disjunction operator

In this paper, we will draw an account for the link of Bengali polar question particle with the interrogative disjunctive morpheme from Jayaseelan's disjunctive analysis of question words. We have already noticed that Bangla polar questions indicate disjunction in the answer space in section 3. Based on our observation of Bangla polar questions' answer space, I suggest that there is a disjunction operator in the polar question of this language and the disjunction operator gets lexically realized by the QP 'ki.' This also supports our understanding of the identity relation between the PQP and the interrogative disjunction marker in Bangla. In the background of the languages like Malayalam, Sinhala, Japanese, and Kannada, we can argue that in Bangla there is three-way identification of question particle = question operator = disjunction operator.

In Bangla 'ki' is not the only QP which gets realized as the [+Q] disjunction morpheme. Bhadra (2017) also shows that the embedded QP 'kina' which is equivalent to English 'whether' (according to Bhadra (2017) and Dasgupta (1980)) seems to mark disjunction in alternative questions. In (20) where 'ki' and 'na' are concatenated, 'kina' stands for the [+wh] QP 'whether' and forms an embedded polar question. In (21) where 'ki' has moved from its base position to subject 2 position to mark scope for disjunction, it gives rise to embedded alternative question.

- (20) maa jan-te chaye Ram chaa khey-ech-e kina mother know-INF want Ram tea eat-PERF-3 whether 'Mother wants to know whether Ram had tea.'
- coffee (21)maa jan-te chaye Ram ki chaa khey-ech-e na mother know-INF want Ram ΚI tea eat-PERF-3 NA coffee khey-ech-e eat-PERF-3

'Mother wants to know whether Ram had tea or coffee.'

5 The interrogative disjunctive ki and na in Bangla

The alternative questions formed by the disjunction marker 'na' (underlying 'kina') and the ones formed by 'ki' cannot be used interchangeably. Let us consider the following discourse in (22) to understand the difference between 'na' and 'ki' as interrogative disjunction marker. In (22), the speaker at first asks the alternative question with disjunction 'na' (22A) to know the answer of the *Big Question* 'what will you have?' When the speaker does not get a clear response from the addressee in (22B), he chooses the strategy of asking alternative question using the disjunction marker 'ki' (22A'). The speaker here alters the disjunction marker from 'na' to 'ki' in order to force the addressee to choose one of the given alternatives and give a clear response. The *cornering effect* (termed by Beizma (2009), and Beizma and Rawlins (2012)) cannot be derived if the speaker asks the alternative question again using the disjunction marker 'na', as evident from the infelicitous data (22A'') in the discourse (22).

ki (22)A: tumi chaa kha-b-e na tumi coffee kha-b-e you eat-FUT-3 ΚI tea NA you coffee eat-FUT-3 'Will you have tea or coffee?' B: coffee-r Sadh khub abar chini chara chaa kora, 0 coffee-GEN taste very strong also sugar without tea also kora hoy be strong 'Coffee tastes strong. However, tea without sugar also tastes strong.' A': tumi chaa ki kha-b-e coffee kha-b-e tumi eat-FUT-3 ΚI coffee eat-FUT-3 you tea you 'Will you have tea or coffee?' A'': #tumi ki chaa kha-b-e tumi coffee kha-b-e na ΚI tea eat-FUT-3 NA coffee eat-FUT-3 you you 'Will you have tea or coffee?'

Apart from *cornering effect*, there is another difference between the interrogative disjunction markers 'na' and 'ki.' Unlike 'na', 'ki' cannot disjoin noun phrases; cf. (23) and (24). The disjunctive 'ki' cannot be used to disjoin non-finite clauses (25), but the disjunctive 'na' can (26)

- (23) *Ram chaa ki coffee kha-b-e Ram tea KI coffee eat-FUT-3 Intended: 'Will Ram have tea or coffee?'
- (24) Ram ki chaa na coffee kha-b-e Ram KI tea NA coffee eat-FUT-3 'Will Ram have tea or coffee?'
- (25)*maa Ram-ke chaa khe-te ki coffee khe-te bol-l-o mother eat-INF KI coffee Ram-ACC tea eat-INF say-PAST-3 Intended: 'Did mother ask Ram to have tea or coffee?'
- (26)(ki) Ram-ke chaa coffee bol-l-o khe-te khe-te maa na mother KI Ram-ACC eat-INF NA coffee say-PAST-3 tea eat-INF 'Did mother ask Ram to have tea or coffee?'

The account for the non-occurrence of the disjunctive 'ki' in alternative questions where two noun phrases or two non-finite clauses are disjoined can be drawn from the difference between the disjunctive markers 'ya:' and 'ki' in Hindi. Bhatt and Dayal (2014) notices that the disjunctive 'ya:' can be used as a boolean disjunction marker and as an

interrogative disjunction marker. But, 'ki' (which is homophonous to the finite complementizer in Hindi) can only be used as an interrogative disjunctive marker. They further show that 'ki' cannot be used to disjoin noun phrases and non-finite clauses, but it can disjoin finite clauses. Based on this behavior of the disjunctive 'ki', Bhatt and Dayal gloss 'ki' as OR_{FIN}.

In Bangla there is another question particle that surfaces as [+Q] disjunction marker. The Bangla speakers can use another interrogative disjunction marker to derive alternative questions, cf. (27). In (27) the two polar questions are disjoined by the grammatical element 'naki.' The same element has been used as an evidential question particle in the clause final position of a polar question (mentioned in Bhadra (2017)), cf. (28). The question in (28) can be uttered if the speaker has either heard from somebody or has seen something which provides the evidence that Ram might have tea. Thus, the speaker utters the question in (28) to confirm.

(27)	Ram	chaa	kha-b-e	naki	coffee	kha-b-e
	Ram	tea	eat-FUT-3	NAKI	coffee	eat-FUT-3
	'Will Ram have tea or coffee?					
(28)	Ram	chaa	kha-b-e	naki?		
•	Ram	tea	eat-FUT-3	NAKI		
	'Will Ram have tea?'					

The properties of the disjunctive 'naki' and its difference with the disjunctives 'ki' and 'na' (underlying 'kina') have not yet been explored and I leave this for the future research.

6 Conclusion

In this paper, we have noticed that polar questions in Bangla are formed in two ways. One is by using the prosody and the other one is by using the polar question particle, besides the prosody. We have also found out that the polar questions with and without the PQP 'ki' differs in generating possible responses. Later, we have noticed that the PQP 'ki' also surfaces as a disjunctive particle in alternative questions. We have argued that there is an identity between the polar question particle and interrogative disjunction marker in Bangla. This has led to the claim that in Bangla both the polar and alternative questions involve disjunction operator and the question particle 'ki' is the lexical realization of that operator. The final argument of the paper tries to figure out the difference between the disjunctive marker 'ki' and the disjunctive marker 'na.' We have noticed two differences between these two particles, i.e., the alternative questions formed by 'ki', and not by 'na', are particularly used to derive *cornering effect* and 'ki', unlike 'na', cannot be used to disjoin noun phrases and non-finite clauses.

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