Questions, Polarity and Alternative Semantics

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1 Introduction

Since Huang (1982), languages with in-situ Wh-elements have been a source of great interest in comparative syntax. In particular, the claim has been that the difference between these languages and those with overt Wh-movement is simply that movement takes place at LF in the former languages, while in the latter it must take place between D-structure and S-structure. Under this view, any differences in acceptability and/or interpretation must be related to the different properties of movement at these two distinct levels. It is in fact well known that this LF-movement escapes certain subjacency violations which would render the equivalent forms in English-type languages unacceptable. The motivating force behind this type of analysis is the conviction that at LF, the representation of questions is the same regardless of the language. This in fact, can be seen as one of the grounding assumptions behind the LF level within linguistic organisation— that it is the level at which semantic relationships represented and moreover that these relations are a property of UG, not subject to parametric variation (refs?).

In more recent Minimalist approaches to syntactic theory, D-structure and S-structure are no longer distinguishable levels (Chomsky 1995), although a distinction can still be made between movement that is overt (occurs before Spell-Out) and movement that is covert (occurs between Spell-Out and LF). Once again, within this theory, the difference between overt and covert movement can be related to a simple parametric choice between 'strong' vs. 'weak' attracting features respectively. Moreover, covert movement, being plausibly movement of formal features alone, could have rather different properties from movement of full categories. Thus, once again, any differences between the two types of languages can potentially be derived from this more basic property. This theory also implicitly holds to the assumption that at LF all questions 'look the same' at the level of composition and organisation of features visible at the LF level.

In addition to the operator analysis, a number of recent analyses of wh-in-situ have argued that the wh element in these languages is not itself an operator, but rather a variable bound by a (potentially) non-overt question (Qu) operator (Aoun and Li 1994, Shi 1994). These analyses, while solving many of the problems

inherent in the operator account, also share the assumption that the compositional semantic structure of wh-questions is identical across languages.

I wish to argue that it is time to take a fresh look at questions in in-situ languages, and specifically at their semantics. The rethinking of the issue of in-situ languages is prompted first of all by a basic empirical problem: Bengali uses the same group of words to express wh-items as it does for negative polarity items and for 'free-choice Any'. Moreover, this is not an isolated or idiosyncratic morphological accident, but is a pattern which is found with great regularity in in-situ languages, many of which are genetically unrelated (Hindi, Japanese, Malayalam). While analyses which attempt to relate the negative polarity use to the other declarative uses do exist (Lahiri (1995) for Hindi, Lee and Horn (1992) for English), the relationship to questions has remained unexplored. From the point of view of explanatory adequacy, as well as issues of acquisition and economy of description, a unification of the differing functions of these wh-items seems desirable.

I argue that neither the operator analysis nor the bound variable analysis are sufficient to capture the phenomenon of wh-in-situ in languages like Bengali. An understanding of the different uses wh-elements are put to in a language like this requires us to question the basic assumption that at LF all questions look the 'same'. In particular, I wish to show that the questioning speech act in Bengali (and languages like it) is semantically composed in a radically different way than in English. The interpretation of questions under this view will involve both semantic and pragmatic elements, with the semantic contribution being composed, not in an operator structure as in English, but in a way that interacts with the pragmatic instructions to produce the same *effects* as an operator structure. Moreover the pragmatic contribution in these constructions also has explicitly linguistic triggers, and in this sense it is a part of competence in the same way that semantics is. Thus, I will not be supporting a view of pragmatics under which the difference between semantics and pragmatics is that the former is part of competence while the latter is part of performance. Rather, semantics is the component which interacts compositionally with the syntax, whereas pragmatics constitutes the processes by which this compositional structure is parleyed into something which can be related explicitly to truth conditions.[1] Specifically, I will propose an analysis based on the principles of alternative semantics made available by recent and influential work by Rooth (1985, 1994), which I argue allows a particularly elegant and unified account of these 'question words' across all their contexts of use.

The paper is organised as follows. In section two, I lay out the basic data from Bengali and the different contexts in which these wh-items appear. In section three I argue explicitly against treating these items as operators, and in section four against treating them as variables which are themselves bound by an operator. In the fifth section, I lay out the basic principles of Rooth's (1994) alterna-

[1] If by the LF level we mean that level which can be related directly to truth conditions, then it is surely true by definition, that all questions should 'look the same' at that level. However, if by LF we mean the representation of the semantic contribution which is directly related to syntactic structure, then at LF, questions in Bengali look quite different from those in English.

tive semantics for focus and argue that it can be used to account for the different Bengali construction types using these wh-in-situ items. The concluding section summarises the advantages of the analysis and considers the implications it has for both comparative semantics and the semantics/pragmatics interface.

2 The Data

Question words in Bengali, henceforth k-words, constitute a systematic class of items beginning with 'k', which fill out the whole paradigms of person, place and time in a morphologically transparent way.

Kokhon	'when'
Kothae	'where'
Kon x	'which' -x (inanimate nouns)
Ki	'what' (inanimate nouns)
Ke/Kara	'who' sg/pl (nominative)
Kake/Kaderke	'who' sg/pl (accusative)
Kar/Kader	'whose' sg/pl

2.1 Question Formation

All questions in Bengali are formed 'in situ'. The question words take all the inflections one would expect to find on ordinary referential nouns, so that apart from the presence of the interrogative form of the NP, the structure of a question and a declarative are identical. The question is marked by means of intonation, and by the presence of a k-word. The following examples show minimal pairs consisting of a declarative followed by its related interrogatives.

(1) NEUTRAL DECLARATIVE
Tumi kalke bajare moddhe o-ke dekhle.
you-NOM yesterday in the market he/she-ACC see-PAST2ND
'You saw her yesterday in the market.'

(2) YES-NO QUESTION
Tumi *ki* kalke bajare moddhe o-ke dekhle (ki).
you-NOM Q yesterday in the market he/she-ACC see-PAST2ND (Q)
'Did you see her yesterday in the market?'

(3) QUESTIONING THE TIME ADVERB
Tumi *kokhon* bajare moddhe o-ke dekhle.
you-NOM when in the market he/she-ACC see-PAST2ND
'When did you see her in the market?'

(4) QUESTIONING THE PLACE ADVERB
Tumi kalke *kothae* o-ke dekhle.
you-NOM yesterday where-LOC he/she-ACC see-PAST2ND
'Where did you see her yesterday?'

(5) QUESTIONING THE SUBJECT
Ke kalke bajare moddhe o-ke dekhle.
who-NOM yesterday in the market he/she-ACC see-PAST2ND
'Who saw her yesterday in the market.'

(6) QUESTIONING THE OBJECT
Tumi kalke bajare moddhe *ka-ke* dekhle.
you-NOM yesterday in the market who-ACC see-PAST2ND
'Who did you see yesterday in the market.'

(7) QUESTIONING A POSSESSOR
Tumi kalke bajare moddhe *kar* ma-ke dekhle.
you-NOM yesterday in the market whose mother-ACC see-PAST2ND
'Whose mother did you see yesterday in the market.'

2.2 Negative Polarity

A simple existential in Bengali is usually expressed by a bare nominal, or by a nominal plus singular classifier (depending on whether it is non-specific or specific respectively). In negated sentences however, a narrow scope existential must be expressed using a k-word with a suffixed emphatic particle *o*. Thus, sentences translated by negative polarity 'any' in English, are expressed in this manner as in (8) and (9).

(8) Tara *kon-o* boi pOṛe na.
They-NOM which-EMPH book read-PRES3RD NEG
'They don't read any books.'

(9) Tara *kotha-o* jay na.
they-NOM where-EMPH go-PRES3RD NEG.
'They don't go anywhere.'

Similarly, for 'ever', we get the k-word corresponding to time plus the emphatic particle (10).

(10) Tara *kokhon-o* śekhane jay na.
They-NOM when-EMPH there go-PRES3RD NEG
'They don't ever go there.'

In Bengali, there is no asymmetry between subject and object position with respect to the possibility of these negative polarity items. In particular, a k-word in subject position gets a narrow scope existential reading in negative contexts as well.

(11) *Keo* śekhane jay na.
Who-EMPH there go-PRES3RD NEG
'Nobody ever goes there.'

Laka (1990) relates this possibility in languages to a parametric choice between situating NegP either above or below IP, thus either taking scope or not over the subject position for the purposes of negative polarity licensing. This is not at issue here, although the Bengali syntax and word order are consistent with NegP being situated outside TP. In addition, more generally, negation may take wide scope over a simple indefinite in subject position in Bengali, unlike English (and like Hindi (Lahiri 1995)). Thus the language is quite consistent in this regard, and we expect negative polarity items to be licensed in subject position.

2.3 Free Choice 'Any' Interpretations

Paralleling the double usage of 'any' in English, the k-words in Bengali can also be used in non-negative contexts to express 'free choice Any' interpretations, in imperatives and generic-like contexts. In these cases, however, it is necessary to add the demonstrative particle *je* to achieve the interpretation.

(12) Je *kao-ke* jiggesh koro
that who-EMPH-ACC ask do-IMPERATIVE
'Ask anyone.'

(13) Je *kon-o* am ṭolo
that which-EMPH lift-IMPERATIVE
'Take any mango.'

(14) Je *kon-o* śomoy ṭhik
that which-EMPH time okay.
'Any time is ok.'

(15) Je *ke-o* śontoron korte pare
That which-EMPH swim do-INF can-PRES3RD
'Anyone can swim.'

The challenge posed by these data consists in arriving a semantic interpretation for the k-word in Bengali which will make sense of all three of these contexts of use. The intuition is that while the interpretation of the k-word itself is a consistent and unified one, it gives rise to different semantics in the context of (i) the sentence type (declarative, negative or interrogative), (ii) the emphatic particle and (iii) the demonstrative particle. The emphatic particle is the least well understood of these linguistic contextual elements, but any successful analysis of the phenomena under consideration here must provide a specific proposal for the semantics of this form.

The emphatic particle does have its uses elsewhere in the language. It is generally used in the context of a focused phrase, and has the force of the English adverb 'also'.

(16) Ami-o aśbo
I-NOM-EMPH come-FUT1ST
'I will come too.'

(17) Ami Ram-ke-o dekhlam.
I-NOM Ram-ACC-EMPH see-PAST1ST
'I also saw Ram (in addition to all the other people I saw)'

3 The Classical View

3.1 Question Words as Operators

There have been various attempts in the literature to deal with the phenomenon of wh-in-situ, and assimilate it to the analyses given for English question formation. Huang(1982) for Chinese and Lasnik and Saito(1984) for Japanese, have both argued that the syntactic process of Wh-movement is duplicated in these languages by an analogous movement at Logical Form.

While this movement should technically be subject to all the constraints and conditions put on move-α in general, it is well known that certain of these LF movements appear to violate standard island conditions in the language.

If we consider a language like Japanese, Wh-movement to Comp occurs at LF with an overt Q morpheme, *ka* or *no* , marking the scope of the operator. Thus, the following sentence in Japanese (18) would have the LF as in (19).

(18) Mary-wa John-ni nani-o ageta-no?
Mary-TOP John-DAT what-ACC gave-Q
'What did Mary give to John'

(19) [[[Mary-wa John-ni t_i ageta]$_{IP}$ -no]$_{C'}$ **nani-o**$_i$]$_{CP}$

While the above examples are straightforward, the following question in Japanese would involve constructing an LF which should violate the Complex NP constraint (20). Nevertheless, this example and the following one consisting of a violation of the Adjunct Island Constraint (21) are both grammatical.

(20) Mary-wa [$_{NP}$[$_{S'}$ John-ni nani-o ageta] hito-ni] atta-no?
Mary-TOP John-DAT what-ACC gave man-DAT met-Q
*$What_i$ did Mary meet [the man [who gave t_i to John?]]

(21) Mary-wa [John-ga nani-o yomu mae-ni] dekaketa-no
Mary-Nom John-Nom what-Acc read before left-Q
*$What_i$ did Mary leave before John read t_i?

The Bengali questions seem to show the same pattern as the Japanese. Example (22) shows a typical question where an element within the adjunct phrase is being questioned.

(22) Ram-er *ki* pOṛar age Sita cOle gælo.
Ram-GEN what reading before Sita walked go-PAST3RD.
'Sita left before Ram read what?'

Huang's solution to this discrepancy was to state ultimately that subjacency violations are not relevant at Logical Form. Although the details of the syntactic formalism have changed, the general thrust of the solution has remained the same— since overt and covert movement differ with respect to a number of crucial properties, the restrictions on covert movement can be relaxed in motivated ways (Watanabe 1992, Chomsky 1995). In addition, Huang (1982) argued that some reflexes of movement were still apparent in that, even in Chinese, one could find an asymmetry between the behaviour of arguments and adjuncts with respect to extractions such as (22) above. Thus, Huang (1982) found that for his dialect of Chinese, arguments could be extracted from within islands while adjuncts could not. These facts were explained by reference to the ECP, since traces of arguments were argued to be lexically governed in Chinese, while those of adjuncts had to be antecedent governed. However, the data on this point are notoriously variable, even in Chinese, and there are certainly dialects in which no such asymmetry is detectable (Shi 1994). Similarly, in Bengali, questioning an adjunct within an adjunct island (23) is just as felicitous as questioning an argument (22).

(23) Ram-er *kothae* boiṭa pOṛar age Sita cOle gælo.
Ram-GEN where the book reading before Sita walked go-PAST3RD.
'Sita left before Ram read the book where?'

Thus, in many dialects of Chinese, and certainly for the speakers of Bengali consulted here, there is no direct evidence for asymmetries in behaviour that could be explained by appeal to the ECP or other movement dependent principles (but see Aoun and Li 1994 for an account of these asymmetries in a 'wh-item as variable' analysis).

There is no doubt here that a solution to the problem which postulates covert movement of the wh-item (or its associated formal features) is possible. In doing so, it must be noted that the original argument for LF (or the covert component generally) as a level of syntax, based on the similarity of the processes that occur at each level is somewhat weakened. These issues aside, while covert movement is a possible implementation, the direct evidence for it is not overwhelming. Not only is the evidence for covert movement unconvincing, it also forces us to give up any chance of unifying the various different uses of the k-words in Bengali (or in any of the other languages which show the same pattern). The semantics of the wh-operator cannot be reconciled with the semantics of a variable, or of a negative polarity item in any natural way.

In an influential contribution to the issues of wh-in-situ, Pesetsky (1984) claims that the only way that wh-phrases can violate subjacency requirements is when they are 'Discourse linked' (D-linked):

(24) *Non D-linked wh-phrases are quantifiers and adjoin to S'*

(25) *D-linked wh-phrases are not quantifiers*

For Pesetsky, D-linked means that the range of felicitous answers is constrained by some set which both speaker and hearer have in mind– ie in the discourse. Non D-linked means that the range of felicitous answers is constrained only by the syntax of the question itself.

This is an interesting proposal, and it seems that there is something right about the appeal to discourse. However, once again, judgements on the data are notoriously variable. In particular, my Bengali informants allow 'subjacency violation' questions even out of the blue, regardless of whether a context has been set up or not. The intuition I wish to pursue here is that the contextual nature of the 'answer set' is not an exceptional case sometimes found in these languages, with the wh-item behaving like a proper operator in all standard cases. Rather, these languages uniformly construct their questions with non-operator whs (in a way to be made more explicit in section 5). Certainly, the possibility of D-linking does not seem to exist in English in quite the same way as it does in English or Bengali, contrary to what we would expect if this were merely a contextual, non-linguistic phenomenon.

The non-operator status of k-words in Bengali is indirectly suggested by the other uses to which they are put in the language, and also by the uses they are *not* put to. In English, and similar languages, the wh-word can also be used as a relative marker, a natural extension of its operator function to non-interrogative contexts.

(26) This is the man who I saw yesterday.

However, k-words in Bengali have never been adapted to these other, clearly operator-like contexts. In fact, relative clauses do not even exist in Bengali at all. let alone employ k-words as operators.[2]

3.2 Non-Interrogative Contexts

Looking to the other uses that the k-words do have in this language, the obvious approach to take is an explicitly quantificational one. Consider the two uses below. In a negative contexts, the k-word seems to be a narrow scope existential.

[2]Bengali possesses only a correlative construction as discussed by Dayal (199?) for Hindi, although Hindi itself also has a proper relative in addition to the correlative structure. To express this kind of meaning in Bengali, one would have to use the correlative construction as in (i) below, using the cataphoric pronoun 'je'.

(i) je boi kineche Ram ta-ke cene.
the person book has bought Ram-NOM that person-ACC knows
"Ram knows who(singular) bought books"

But this has a completely different kind of syntax, and does not use k-words in its construction.

(27) Tara *kotha-o* jay na.
they-NOM where-EMPH go-PRES3RD NEG.
'They don't go anywhere.'
¬ ∃ x: x a place [they go to x]
∀x: x a place [¬ [they go to x]]

(28) *Ke-o* amṭa khacche na.
who-EMPH mango-DEF eat-PRESPROG3RD NEG.
'Noone is eating the mango'
¬ ∃ x: x a person [x is eating the mango]
∀x: x a person [¬ [x is eating the mango]]

As we can see, if the 'k-word plus emphatic' is to be endowed with some quantificational force, we might choose either a wide scope universal or a narrow scope existential for the sentences above. For English, a wide scope universal analysis for 'any' has been shown to be empirically inadequate (Ladusaw 1979, Carlson 1980). In addition, the universal quantifier is to be dispreferred because in general, when the k-word plus emphatic appears in non downward-entailing (non-generic) environments, it receives a non-specific indefinite interpretation.[3]

(29) Ram *kothao* gælo
Ram-NOM where-EMPH go-PAST3RD
'Ram went somewhere or other (I don't know and it's not relevant where).'

The interpretation of the k-word plus emphatic in this case is more like a simple existential, with the strong discourse condition that the speaker does not care what the specifics of the situation are. Thus, the straightforward way of analysing the k-word plus emphatic in sentences (29) and (28) above, would be to designate it a narrow scope existential, just like negative polarity 'any' in English.

Like, 'any' in English, these k-words also occur in 'free choice' contexts with universal interpretations. These sentences raised classic problems for a unified interpretation of English 'any' as a quantifier, and raise the same ones for us in Bengali. In the free choice examples, we want to be able to interpret the k-word form as being universally quantified.

(30) Je *ke-o* śontoron korte pare
that who-EMPH swim do-INF can-PRES3RD
'Any one can swim.'
∀x[x can swim]

The 'free choice any' interpretation is found with the k-word plus emphatic, and in the presence of the demonstrative particle *je*.

Thus, the classical modes of analysis offer us three disjunctive interpretations for the k-words in Bengali:

[3]These sentences are quite marginal and appear only under very specific discourse conditions.

(i) Without an emphasiser, and in purely interrogative contexts, they function as wh-operators.

(ii) With the emphasiser attached, and in negative contexts, they are negative polarity items.

(iii) With emphasiser attached, but this time with the addition of a demonstrative particle, they function as wide scope universal quantifiers.

Unlike standard cases of ambiguity, the different interpretations of these k-words are not in free variation, but in complementary distribution, depending on syntactic and morphological context, indicating some level of identity. Within the classical analysis however, it does not seem possible to give a unified interpretation for the k-word, or a compositional account of the contributions of the emphatic particle and demonstrative. The problem is made more pressing by the fact that many other unrelated languages show this same cluster of usages for the elements found in wh in-situ questions. We are not dealing, therefore, with a single contingent, idiosyncratic morphological fact (see Appendix).

Thus, considered separately, the analysis of the Bengali k-word as a wh-operator moving at Logical form, or the analyses of the various other uses in terms of different quantifier types cannot be criticised on their own terms. However, considering the phenomena together as a whole, such analyses miss the obvious and striking generalisation— that the very same morphological items are being used in all these interpretational situations.

4 Question Words As Indefinites

The second and more important class of theories, and one that has more recently emerged in the literature, involves analysing the wh-in-situ element as some type of indefinite (Aoun and Li 1994; Shi 1994; Lahiri 1995, Lee and Horn 1994). This option is an initially attractive one, and one which seems to hold more potential for unifying the different uses of these elements within a language. However, I will show that there are also problems with this account, and that in the end it does not go far enough.

Perhaps one of the earliest attempts to assimilate some of the functioning of wh-elements to indefinites can be found in Berman (1989) for English. Berman makes the claim that question words in English function like indefinites in indirect questions. It has long been noticed that in certain contexts wh-words acquire specific quantificational force. This quantificational force is often universal, as in (31) where an exhaustive reading of the wh-pronoun is salient.

(31) Mary knows who did well on the exam.

Berman (1989) shows that existential readings for the wh-pronoun are possible. So, for example in (32), the sentence can be judged true if Jen only happens to know one such place.

(32) Jen knows where to hear good jazz.

The interpretation of these wh-pronouns is not limited to universal and existential contexts– in fact, we can see that the question word takes the quantificational force of any overt quantificational adverb that it may be embedded under. So that the following sentence is possible.

(33) Jen mostly remembers what she got for her birthday.

Berman makes a strong case for the correct interpretation of these question words as indefinites, and of indirect questions as open sentences which provide the restrictive clause in the tripartite quantificational representation of Lewis (1975). I repeat the rough definition from Berman (1989) here.

(34) α = Q, R(Σ), N(Σ)
$||\alpha||$ = is true iff for Q-many assignments of values to each free variable x ϵ Σ such that R(Σ) is true, N(Σ) is true.

(35) "Jen mostly remembers what she got for her birthday"
[Mostly x : Jen got x for her birthday] [Jen remembers she got x for her birthday.]

However, there are a number of reasons to be suspicious of the free variable analysis for Bengali k-words. In particular, there do not seem to be analogous cases where the k-words in Bengali exhibit variable quantificational force, depending on the presence of an adverbial.

While the bare noun is grammatical in (36) below being unselectively bound by the adverbial quantifier 'usually', the interrogative element version is completely out (37).

(36) Beṛal-er śObhabOto lej thake
Cat-GEN usually tail remain-PRES3RD
'A cat usually has a tail.'

(37) *Kono Beṛal-er śObhabOto lej thake
what-EMPH cat-GEN usually tail remain-PRES3RD
'A cat usually has a tail.'

Thus, the fact that these elements do *not* generally exhibit variable quantificational force, being unselectively bound by a quantifier, is one reason for not wanting to represent them as free variables.

In addition, these elements do not even seem capable of being bound by general existential closure to give specific indefinite readings. Consider the English discourse given below in (38).

(38) Yesterday, a student came to see you. She's a good friend of mine.

In Bengali, k-words may never be used in this kind of context. While the first sentence is possible (39), the follow up sentence would be infelicitous.

(39) Goṭo kal kon-o ækṭa student toma-ke dekhte elo
yesterday which-emph one-def student you-acc to see came
'Yesterday a student came to see you'

In fact the k-word may only be used in a sentence like (39) in Bengali if the referent is unknown, non-specific, and with the implication that the actual referent is completely irrelevant to the discourse.

While it is clear that the k-word in Bengali is not an indefinite in a completely general way, it might nevertheless be possible to analyse it as an indefinite with rather specific restrictions on the nature of the operator which binds it. An analysis which treats the wh-in-situ element as a variable in question contexts has recently been proposed for Chinese (Aoun and Li 1994). The analysis involves postulating a non-overt Qu operator which binds the variable, and which may itself move at LF, while leaving the wh-element in situ. In Chinese (as in Japanese) a Qu particle does optionally occur in a wh-questions, marking the scope of the question, and is a plausible candidate for the operator (or the specifier of the non-overt Qu operator, as in Aoun and Li's analysis). In Bengali, however, no such question particle is even optionally present in a Wh-question. We thus have no direct evidence for this type of analysis in Bengali, although the absence of subjacency and ECP effects in this language seems to favour a non-movement based analysis.

As motivation for their analysis, Aoun and Li gesture towards the fact that these wh-in-situ elements in Chinese are also used as narrow scope indefinites. They claim that the analysis of the wh-in-situ elements as indefinites is more consistent with these other uses than an operator analysis would be. Let us look more closely at this claim, since I have argued that it is one of the clear desiderata for a theory of wh-in-situ.

In fact, a number of recent theories have proposed an indefinite-like treatment of items which unify our *other* two classes, the negative polarity and the 'free choice' uses for the same morphological item. The question is whether this analysis can be made to work for the k-words in Bengali, and whether the indefinite analysis can then be made to embrace the interrogative uses as well.

4.1 Unifying Negative Polarity and Free Choice Uses

The general idea underlying recent attempts to unify the different interpretations of English 'any' and similar forms in other languages, is that the negative polarity uses and the 'universal' uses are merely an example of indefinites whose quantificational force depends on their context (Kamp 1981, Heim 1982). These items are nevertheless specialised in that they incorporate the semantics of 'even' or some similar focus sensitive element, which contributes very particular semantic/pragmatic effects. In this way, the variable nature of the element can be captured (by appealing

to its nature as an indefinite), while its restriction to particular semantic contexts can be understood with reference to the independent semantic/pragmatic features (Lee and Horn 1994; Kadmon and Landman 1993; Lahiri 1995).

One version of this type of analysis is to treat an element like 'any' as an indefinite which incorporates the semantics of focus as applied to a scale. The 'any' particle is taken to refer to the extreme value on some scale, with the presupposition that the other values on the scale are less likely than the minimal value (Lee and Horn 1994; Lahiri 1995). An alternative formulation is found in Kadmon and Landman (1993) where a scale is not invoked, but where the 'any' element is only licensed if a particular contextually 'widened' interpretation entails the statement on the 'narrow' interpretation.

I will concentrate here on the former type of theory, and particularly on the one proposed by Lahiri (1995) for Hindi, since it deals specifically with some of the Negative Polarity Items (NPIs) I am concerned with in this paper— namely the ones which also function as wh-in-situ elements.

Lahiri (1995) proposes to account for the behaviour of NPIs in Hindi by analysing them as a combination of a weak indefinite and a focus sensitive particle analogous with 'also' or 'even' in English. The NPIs he considers are those which are explicitly made up of a numeral or mass indefinite and emphatic particle in addition to certain 'k-forms' which are wh-in-situ elements (although Lahiri is not explicit about this latter function for the k-forms).

ek bhii	'any one, even one'	ek = 'one'
zaraa bhii	'even a little'	zaraa = 'little'
koii bhii	any one	koii = 'which (count)'
kuch bhii	any thing	kuch = 'which (mass)'

In the case of the *ek-bhii* form, the weak predicate in question is the predicate ONE. The contribution of the emphatic particle is to furnish the presupposition that all other predicates on the scale are less likely than the minimal one. Lahiri (1995) shows that in non downward-entailing environments this produces an implicature clash, which rules out the forms in those contexts. He shows that in the context of a non-overt generic operator, no implicature clash is produced and the forms are acceptable in many of the standard 'free choice' situations for this reason.

Lahiri admits that this story cannot be quite right for the *koi-bhii* forms since they do not have the semantics of a cardinality predicate, and the alternatives they introduce are not cardinal. Thus, Lahiri assumes that in the case of the k-forms, the weak predicate in question is a contextually sensitive notion of 'minimal kind'.[4] The first problem with the analysis is that the notion of minimal kind is extremely vague and contextually variable, and seems to amount to no more than a restating

[4]This makes Lahiri (1995) for k-forms very similar to the Kadmon and Landman (1994) analysis who require a pragmatic widening process (equivalent to assuming that the k-form represents the minimal value on the scale) followed by a requirement of strengthening (which is equivalent to requiring the alternatives to be less likely than the minimal form, and contributed by the *-bhii* component in Lahiri's analysis).

of the conditions of downward-entailingness. In other words, the analysis seems to amount to a stipulation that the forms in question have a downward entailing presupposition associated with them, and therefore will clash with any context that explicitly contradicts downward-entailingness.

Apart from that objection, Lahiri (1995) himself points out some problems with the analysis as presented: namely the extension to yes-no questions and imperative contexts for the use of these k-forms is problematic and does not follow straightforwardly from a calculation of implicatures. In addition, the *ek-bhii* type forms also have a slightly wider distribution than the k-forms in a way that is not predicted by Lahiri's analysis. A case in point is the context of adversative predicates where the k-forms are substantially degraded with respect to the *ek-bhii* and *zaraa-bhii* options. In Bengali as well, the k-words do not seem to be a possibility at all in adversative predicate constructions according to my informant (in contrast to the cardinal NPIs which are grammatical), although the downward entailingness requirement is clearly met (witness (40) vs. (41) below).

(40) *Ami *kon-o* am khete Ośśikar korechi
I-NOM which-EMPH mango refuse do-PERFPAST1ST
'I refused to eat any mango.'

(41) Ami am khete Ośśikar korechi
I-NOM which-EMPH mango refuse PERFPAST1ST
'I refused to eat any mango.'

Also, and perhaps more seriously, Lahiri's analysis cannot be made to account for the simple non-polarity, non-generic usage which can be found in certain discourse conditions in Bengali. Consider the non-specific indefinite usage repeated in (42) below.

(42) Goṭo kal kon-o ækṭa student toma-ke dekhte elo
yesterday which-emph one-def student you-acc to see came
'Yesterday a student came to see you'

This is an upward entailing context which we would predict to be ungrammatical by Lahiri's account. In fact it has the meaning of a non-specific indefinite.

In fact, there is good evidence that there must be at least two types of negative polarity item in natural language. Rullman (1994) argues from Dutch data that certain wh-indefinites must be distinguished from the indefinite+even forms analysed by Lahiri (1995) and Lee and Horn (1994). My suspicion is that the 'indefinite+even' analysis is on the right track for a substantial proportion of NPIs in natural language, but that it is not the correct account for wh-NPIs or for the k-forms in South Asian languages in particular. Certainly, even in Hindi, k-forms and cardinal forms do not have exactly the same distribution, and the 'minimal kind' predicate analysis is far less concrete and falsifiable than the cardinality analysis.

The imperative contexts are also a major problem for the Lahiri (1995) analysis. Not only is it not clear how the notion of implicature carries over to this type of utterance, it seems to be exclusively restricted to the k-form NPIs, as Lahiri himself points out. Once again, the k-form NPIs and the indefinite+even NPIs have different distributions.

If we now retuen to the wh-in-situ questions, we see that the indefinite analysis of these forms would require them to be restricted to operator variable structures where the operator was the Qu operator. Thus, in maintaining the indefinite analysis for k-words in Bengali, we would have to come up with an explanation for why the k-words are not used more generally as free variables (i.e. why they don't exhibit variable quantificational force), and why they show up in the following contexts alone.
(a) the non-overt Qu operator,
(b) imperatives
(c) non-upward-entailing contexts (except for the special non-specific indefinite use).

While such an analysis is clearly workable, I believe that there is still a generalisation left unexplained. These 'variables' seem to turn up in contexts where the referent is uncertain. Why do these variables have 'uncertainty' semantics, and why can't they be bound by other quantifiers? We can stipulate the restrictions on the indefinite variable, and on the indefinite variable + emphatic in each of these different cases to achieve a measure of descriptive adequacy. Under the variable indefinite analysis, it is still an arbitrary collection of restrictions, and cannot account for the clustering of these behaviours in language after language. So, while the 'variable' analysis is more unified than the classical approach, it still falls short of true explanatory adequacy.

5 An Alternative Semantics for K-words

In the theory developed by Rooth (1985, 1994), the semantic reflex of intonational focus in English and other similar languages, is a semantic value which exists in addition to the ordinary semantic value of the sentence. This second type of semantic value, or 'focus semantic value' as it is called, is a set of alternative propositions obtainable by making substitutions in the position of the focused phrase. Thus, the focus semantic value (notated by an 'f' superscript) of a sentence such as (43) below, which contains a focused element, would be the set of propositions shown below.

(43) $[\![[_S[Mary]_F\ likes\ Sue]]\!]^f = \{like(x,s)|x \in E\}$
where E is the domain of individuals

Generally, the focus semantic value of a phrase α is notated as $[\![\alpha]\!]^f$, while the ordinary semantic value is notated as $[\![\alpha]\!]^o$. According to Rooth (1994), the ordi-

nary semantic value of a phrase is always an element of the focus semantic value, or rather, the ordinary semantic value is one of the set of alternatives represented by the focus semantic value.

Rooth (1994) demonstrates that a number of different linguistic elements are sensitive to the existence of the focus semantic value. In the case of the adverb 'only' in English, the focus semantic value is a necessary component for constructing the truth conditions of the sentence containing it. The standard example discussed in Rooth (1985, 1994) is that of a situation in which Mary introduces Bill and Tom to Sue, but no other introductions are made. In such as situation (44) is true, while (45) is false.

(44) Mary only introduced Bill to $[\text{Sue}]_F$.

(45) Mary only introduced $[\text{Bill}]_F$ to Sue.

The focus-sensitive adverb 'only' requires the ordinary semantic value to be the only true member of the set of alternatives.[5]

The focus semantic value is also used in achieving pragmatic contrast, and in constraining the set used to construct a scale of alternatives used in standard implicatures. Thus, the notion of a set of alternatives is quite a general and abstract notion which must be appealed to in a large number of linguistic contexts, both semantic and pragmatic. Furthermore, the explicitly contrastive use is not itself crucial, although it is often cited in the most obvious uses of focus intonation. Focus intonation itself is also not crucial here, although it happens that in English, the construction of a set of alternatives is signalled phonologically.

I wish to argue that the construction of a set of alternatives is precisely what underlies the function of the k-word in Bengali, in all its manifestations. Far from being a luxurious pragmatic accessory in a sentence, the notion of alternative propositions lies at the heart of many different sentence types in these languages. The k-word can be seen as the morphological form which triggers the construction of a set of alternatives, except that in these cases, there is no equivalent to the ordinary semantic value since the k-word is non-specific.

5.1 Question Contexts

For questions in these languages, the focus-semantic value *is* the semantic value of the utterance. This focus semantic value expresses the speech act of questioning, which can then be related to the specific truth conditions of its potential answers. In this sense, the semantic analysis of questions I would support is similar to the Hamblin (1973) analysis.

> We shall need to regard 'who walks' as itself denoting a set, namely, the set whose members are the propositions denoted by 'Mary walks',

[5] A subtler treatment shows that context must also be a factor in constraining the set of alternatives, but the final set will always be a subset of the focus-semantic value.

> 'John walks', ... and so on for all individuals. Pragmatically speaking a question sets up a choice-situation between a set of propositions, namely, those propositions that count as answers to it.[6]

Updating this view somewhat with the vocabulary and terminology of Rooth's (1985, 1994) work on alternative semantics, the k-words in Bengali morphologically trigger the construction of a set of alternative propositions in the same way that focus intonation on a word in English does. The difference here is that while focus intonation on a particular DP constructs a focus semantic value, an ordinary semantic value for the sentence is also present based on the actual denotation of the DP. In the case of the k-word utterance, no such ordinary semantic value is present. What is unique about the question utterance is precisely that it does *not* construct specific propositional content. Rather, it directly expresses a set of propositional alternatives. Pragmatically, then, the force of a question is that the interlocutor is presented with a choice situation, and required to provide information as to the identity of those options which actually count as true propositions.

(46) Ram *kothae* jacche?
Ram-NOM where-LOC go-PROGPRES3RD
'Where is Ram going?'

By hypothesis, the focus semantic value of the question above would be as shown below.
$[\![[_{CP} Ram\ went\ [place]_F]]\!]^f = \{went(Ram, x) | x \in E\}$

where E is the set of all locations in the domain of individuals
In Bengali, therefore, the k-word is strictly equivalent to a focus marked DP, except

that the actual denotation is unspecific, providing only a general constraint on the domain of individuals it applies to. $[\![$ kothae $]\!] \equiv$ [place]$_F$

$[\![$ ke $]\!] \equiv$ [person]$_F$
$[\![$ kokhon $]\!] \equiv$ [time]$_F$
$[\![$ ki $]\!] \equiv$ [thing]$_F$
$[\![$ kon NP $]\!] \equiv$ [NP]$_F$
The question given in (46) above, can thus be represented more clearly as in (47).

(47) *Identify the true proposition among the following*[7] :
Ram went x_1 place

[6] C.L. Hamblin, 'Questions in Montague English', in *Some Journal* 1973, pg 48.

[7] In fact, the question in Bengali requires the interlocutor to identify one such true proposition. If the questioner wishes or expects that more than one relevant true proposition exists, the k-word must be repeated to make that explicit.

Ram *kothae kothae* jacche?
Ram-NOM where-LOC where-LOC go-PROGPRES3RD
'Where where is Ram going?'

Ram went x_2 place
Ram went x_3 place
⋮
Ram went x_n place

This view works also for yes-no questions in Bangla.

(48) Ram amṭa khello ki ?
Ram mango-the eat-PAST3RD Q
'Did Ram eat the mango?'

The most natural assumption might be to take the *ki* as the question operator, as I have glossed it here, but then it is surprising that (unlike Japanese), it is not optional in wh-questions. On the other hand, the *ki* particle seems to be in the same syntactic slot as negation, immediately following the tensed verb.

(49) Ram amṭa khello na
Ram mango-the eat-PAST3RD NEG
'Ram didn't eat the mango.'

Under this view, we might assimilate it to the other k-words and say that it generates the following two alternatives (arising from substitution into this negation/position functional slot).

(50) Ram amṭa khello ∅/na
Ram the mango eat-PAST3RD (positive)/(negative)
'Ram ate/didn't eat the mango.'

This view of the Yes-No question is once again consistent with Hamblin's interpretation rule for the adformula 'is it the case that'.

> "The denotation-set of 'is it the case that'-*a* must have as members just the denotation of *a* and the denotation of the negation of *a*..."[8]

The analysis here goes a step further in that it relates the alternatives present in the semantics directly to the linguistic form of the utterance: they are constructed from substitutions into the slot occupied by the k-word, in both wh-questions *and* yes-no questions.[9]

[8] C.L. Hamblin, 'Questions in Montague Semantics', in *Some Journal* 1973, pg 50.

[9] In fact, the word order of the yes-no question is more complicated than I have indicated above. The version given above in (50) represents a more archaic word order and the following version is preferred in colloquial speech.

(51) Ram (ki) amṭa khello?
Ram Q mango-the eat-PAST/3RD
'Did Ram eat the mango?'

The question particle occurs just after the Subject of the sentence, and before the predicative complement, forming a prosodic unit in fact with the Subject. In addition, the *ki* is quite often not present at

5.2 Independent Evidence from Intonation

There is independent evidence from intonation that the analysis of k-words as alternative inducing elements is on the right track. In a recent paper by Hayes and Lahiri (1991), the intonational structure of Bengali is analysed in some detail and provides an ideal resource for the semantic hypotheses advanced in this paper. Hayes and Lahiri (1991) (henceforth H & L) argue that intonation contours can be analysed as 'tunes' which then associate to text in various predictable ways. There are two kinds of tune association that seem to be attested in natural language: association to a constituent boundary within a hierarchy of prosodic domains, and association to a stressed syllable (Selkirk 1984; Pierrehumbert 1980, 1986; Pierrehumbert and Beckman 1988). The important feature of H & L's analysis is that are able to account for the main utterance types in Bengali in terms of tunes consisting of two tones (H(igh) and L(ow)), together with the systematic modes of association. For our purposes here, it is instructive to look at the analysis H & L present for the standard focus contour in Bengali.

(52)

							x																	
		x					x				x				x									
		x		x		x	x		x		x		x		x		x		x		x		x	
[[śæ	mo	li	]$_P$	[ra	me	r	ba	ṛi	]$_P$	[ḍhu	ke	chi	lo	]$_P$]$_I$
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Shæmoli	Ram-er	baṛi		ḍhukhechilo.										

'Shamoli entered *Ram's house*.'

Under neutral focus, the rightmost phonological phrase of the Bengali sentence receives the strongest stress. However, under conditions of narrow focus it is the phonological phrase bearing that narrow focus that receives the main stress (52). In addition, H & L show that narrow focus is associated with a phonemic tone contour of the form L*H$_P$L$_I$. The asterisk diacritic indicates that the tone in question is a 'pitch accent' and docks onto a stressed syllable. The other two tones (H$_P$ and L$_I$) are boundary tones and are associated with the right boundary of a phonological phrase and intonational phrase respectively. The intonational boundary tone is the standard boundary tone for a declarative and the the L*H$_P$ contour fixes itself to the phonological phrase that is in narrow focus, with the L* attaching to the leftmost stressed syllable of that phrase and the H$_P$ to its right boundary (see (53) below).

(53) [. . . [ramer baṛi]$_P$ [ḍhukhechilo]$_P$]$_I$

all although the distinctive intonation remains. I would argue that this second order for the question particle is consistent with a reanalysis of *ki* as a specifier of the functional projection NegP, rather than the head, possibly as an agreement element cliticised onto the Subject in Spec, NegP. In Bengali, all specifiers are on the left while the heads are final. A similar reanalysis has been argued to account for the change in status of French *ne*, where it started off as the head of the NegP, but is now analysed as the specifier, with *pas* in the head position. Indeed, like Bengali *ki*, the French *ne* is almost always omitted completely in colloquial speech.

L* H_P L_I

Using a wide variety of different focused constituents, H & L show that the tonal contour L*H_P always serves to 'outline' the constituent that is semantically in narrow focus. In Rooth's (1985, 1994) terms, the L*H_P contour always 'outlines' the locus of semantic substitution in a linguistic context where a set of alternative propositions is being constructed.

What is significant about these Bengali facts is that the wh-question in Bengali behaves identically to the declarative containing narrow focus. In other words, the wh-question containing a k-word in Bengali is treated intonationally as if it were a declarative with narrow focus on the k-word (54) and (55).[10]

(54) Tumi kon macher-matha ranna-korle?
you which fishhead cooked-PAST2ND
'[Which fishhead] did you cook?'
[. . . [kon macher-matha]$_P$ [ranna-korle]$_P$]$_I$

L* H_P L_I

(55) Tumi kon macher matha ranna-korle?
you which fish's head cooked-PAST2ND
'[Which fish's] head did you cook?'
[. . . [kon macher]$_P$ [matha]$_P$ [ranna-korle]$_P$]$_I$

L* H_P L_I

Thus, the intonational facts support the parallelism between focus structures and k-word questions on a very specific level. Under my analysis, the L*H_P contour would be exclusively associated with the substitutional site for the construction of semantic 'alternatives' in the sense of Rooth (1985, 1994). It has often been noted that wh-elements and focus have something in common, and it has even been said that wh-elements *are* focused elements (Culicover and Rochemont 1983). However, to my knowledge it has never been made semantically explicit what that means. Rooth (1994) states a relationship between the wh-question and the corresponding answer in English which makes reference to the focus semantic value of the potential answer. On the other hand, it is the lexical interpretation of the k-word that we are concerned with in this paper. Certainly, it has never been argued that the semantics of wh-elements is specifically identical to Rooth's semantic notion of contrastive focus elements. We do not find such specific intonational parallelisms between declarative contrastive focus utterances and wh-questions in a

[10]The only difference seems to be a tendency for interrogatives to involve a greater overall pitch range than declaratives (see Hayes and Lahiri 1991).

language like English. I would argue that the reason for the parallelism in a language like Bengali is that in Bengali, and *not* English, questions are constructed from explicitly alternative-inducing elements, and not from formal operators.

H & L also examine the intonational contour associated with a Yes-No question in Bengali. They come to the conclusion that the Yes-No question nucleus is distinctive from all the other types of sentence nucleus in the language. The criterial feature of a Yes-No question is that is associated with a 'tune' which contains a *pair* of tones (H-L) associated with the right edge of the intonational phrase. Consider the following example (in the Yes-No questions which follow, I will use the forms without the final *ki* element, since these are most colloquial, and were the forms used by H & L in their experiment).

(56) Tumi-(ki) kagojOla-ke dekhle?
You newspaperman-ACC see-PAST2ND
'Did you see the newspaper man?'
[. . . [kagojOla-ke]$_P$ [dekhle]$_P$]$_I$

L* H$_I$ L$_I$

Although H & L assume that this is simply the contour associated with the Yes-No question without further decomposition, it is significant to note that it can in fact be assimilated to the other k-form questions in the language. Recall that the analysis given above for the Yes-No question in Bengali assumes the construction of a set of alternatives based on the different types of NegP phrase that would be available (namely $\pm$negative). If we pursue the generalisation arrived at for the intonation contour of a substitutional phrase, then we would expect the high tone corresponding to that contour to dock onto the negation element. The negation element in fact occurs at the right periphery of the sentence in Bengali. The L pitch accent would have to dock onto the left most stressed element of the minimal phonological phrase containing the contrasted element, as observed. Thus, the H observed in (56) would not be a boundary tone associated with the full intonational phrase as H & L have notated it, but H$_P$, the very same H$_P$ we have seen already in the focus contour.

(57) Tumi-(ki) kagojOla-ke dekhle?
You newspaperman-ACC see-PAST2ND
'Did you see the newspaper man?'
[. . . [kagojOla-ke]$_P$ [dekhle]$_P$]$_I$

L* H$_P$ L$_I$

This alternative analysis of the Yes-No question contour would be phonemically and phonetically indistinguishable from the analysis that H & L present, and consistent with its spirit (A. Lahiri p.c.). Moreover, it would allow us to motivate

the Yes-No question intonation from more general principles, based on the semantic analysis given in this paper and the general focus contour explicated in H & L.

To summarise, therefore, the facts from Bengali intonational phonology support a quite direct parallelism between declarative sentences containing elements in narrow focus, and interrogatives containing k-words (both wh-questions and yes-no questions). I take this as indirect evidence for the analysis proposed here which claims that k-words are precisely the lexical triggers for the construction of non-specific 'alternatives' in Rooth's (1994) sense. And moreover, questions in this language are linguistically constructed as a set of mutually present alternatives, which combines with a pragmatic gesture which desires the interlocutor to specify the true alternative.

The analysis given above seems to require that the LF of questions in Bengali is different in a quite radical way from the corresponding LF in English. However, we need to be careful about what we mean by LF and the role it plays in linguistic representation before such claims can be so glibly expressed. If by Logical Form we mean the representation of semantic relationships determined by the morphosyntax of the language, then the Logical Form of a Bengali question is different from what has been assumed for English. If by Logical Form we mean a way of expressing what a sentence actually *means* in context, then surely English and Bengali are exactly the same. The difference lies in the way in which that meaning is composed, in particular in the division of labour between semantic contributions of the morphosyntactic configuration and (language specific) pragmatic processes.

In pursuing this analysis, one of the claims is that the idea of the k-word as 'non-specific alternative' can also make sense of the other uses it is put to in the language. It is to these other uses I now turn.

5.3 Negative Polarity and the Non-Specific Indefinite

The k-word is used with the particle suffix *o* in many downward entailing contexts in Bengali. I repeat a simple example using clausemate negation in (58) below.

(58) Ram *kotha-o* jay na
Ram-NOM where-NOM go-PRES3RD NEG
'Ram doesn't go anywhere'

To understand this construction, we must understand in particular the role of the particle suffix. It is perhaps important to take note of the usage of this particle in other contexts. It is used as what might be termed a 'focus sensitive particle' in the following sort of sentence.

(59) Ram-o ca cai
Ram-EMPH tea want-PRES1ST
' Ram also wants tea'

In Rooth's (1994) terms, the particle is attached to the element of the sentence that is in focus. As is standard, the focus-determined meaning of the utterance is that the ordinary semantic value must be a subset of the set of alternatives determined by the focus semantic value. In addition, the particle itself contributes the meaning of 'also' which relates to the focus semantic value in that it furnishes the presupposition that some true alternative other than the ordinary semantic value also exists.

If S = 'Ram-o ca cai'
$[\![\text{ S }]\!]^o$ = Wanting′('Ram', 'tea')
$[\![\text{ S }]\!]^f$ = { Wanting′(x, 'tea' — X in C } (where C is some contextually salient set of individuals)
(a) Focus determined constraint: $[\![\text{ S }]\!]^o \in [\![\text{ S }]\!]^f$
(b) Contribution of *o*: Presupposition that some other true alternative exists i.e. $\exists$x[x $\neq$ Ram & Wanting′(x, 'tea')]

In its use with k-words, there is no ordinary semantic value at all, by hypothesis. This means in particular, that the interpretation given above cannot be carried over immediately to the k-word cases. Intuitively, however, we can see a relationship between the 'also' usage of the particle and its use in constructing wh-NPIs—they both contribute a meaning of inclusiveness. In a sentence with an ordinary semantic value, the contribution of 'also' is to force the interlocutor to add a new individual to the set of 'true' alternatives. In the k-word sentence, we get the right results from an interpretational point of view if we consider *all* the alternatives to give true/valid denotations. Thus, the correct meaning of (58) can be captured by the following representation.

Ram didn't go to x_1 place
& Ram didn't go to x_2 place
& Ram didn't go to x_3 place
⋮
& Ram didn't go to x_n place
$\forall$ $x_i \in$ E such that x_i is a place, and where E is the domain of individuals.

If we think of the k-word as triggering the construction of a set of alternatives, as in the treatment of question words, then the *o* particle contributes the meaning that *all* of the alternatives are 'true'. Let us call this the conjunctive account.

More generally, however, this raises the question of the scope of the construction of the alternatives the interlocutor is forced to consider. We can see that for the conjunctive account to work, what is constructed is a set of alternative propositions based on the whole finite clause that contains the k-word (and thus also including the negation element). If we had given a quantifier-like interpretation for the k-word, or an operator treatment (either where the k-word is the operator or where

it is the variable), then we would be forced to explain why the negation operator in a sentence such as this one always takes wide scope over the 'alternatives'. In an alternative semantics treatment, we need only stipulate that the default domain for alternative construction is the whole finite clause, and that this does not interact with whatever quantifiers happen to be found within that clause. Being a qualitatively different sort of process, and one which takes place after the construction of LF in its restricted sense, we would not expect the two processes to interact to produce ambiguous scopings.

While I would argue that the scope of 'alternative construction' is the whole proposition in the default case, it is also not the only logical possibility. In fact, I will claim that the analysis given above is not quite right for Bengali, although it seems initially plausible. I have one main reason for rejecting the above account. It leaves out the (albeit discoursally restricted) specific indefinite usage, repeated here as (60) below.

(60) Ram *kotha-o* gælo
Ram-NOM where-EMPH go-PAST3RD
'Ram went somewhere or another.'

My suspicion is that the conjunctive account represents an earlier stage of the construction, perhaps even provides the conditions of possibility for the emphatic particle *-o* being found on these forms. However, in the negative polarity case, we find that the truth conditions can also be captured making use of a narrow scope disjunction, as indicated in the following representation.

Ram didn't go to[x_1 place **or**
x_2 place **or**
x_3 place **or**
$\vdots$
x_n place]

$\forall\, x_i \in E$ such that x_i is a place, and where E is the domain of individuals.

Interpretationally this and the conjunctive account are non-distinct, from a purely logical point of view. From a linguistic point of view, however, the decision is crucial because the two analyses make different claims about the lexical interpretation of the k-word+emphatic. In the latter analysis, the k-word+ emphatic must be interpreted with the *-o* reanalysed as a 'scope' marker for the construction of alternatives (which is now as narrow as the k-word itself). Therefore, we would be led to conclude that just as sentences may have a focus semantic value in addition to their ordinary semantic value, DPs may also have a focus semantic value which is a set of alternative individuals.

(61) $[\![[_{DP}\ kotha - o]]\!]^f = \{x\ |x\ a\ place \in E\}$
where E is the domain of individuals

I am claiming here that the 'disjunction' employed in the representation above, is a result of the notion of alternativity itself and is not contributed by any additional linguistic particle. In other words, a sentence which contains a phrase which only has a focus semantic value is equivalent to one which contains a narrow scope disjunction of possibilities. Of course, this interpretation is not quite equivalent to a literal disjunctive DP, since in the 'alternative DP' version, the domain of relevant individuals is highly contextually sensitive, and the speaker, significantly, does not need to know or name the particular referents involved.

There is good evidence in fact that the separable emphatic clitic *-o* found in the simple focus environments such as (59) *is* somewhat different synchronically from the one found on k-words in downward entailing environnments.

An examination of the morphophonology of these elements in the former contexts, shows that they are clitics, rather than derivational suffixes, and that cliticised forms are not then input to further word formation rules. Specifically, no other clitics or affixes may appear outside the 'stem+*o*' complex. Consider the following example with the DP *Ram* focused in direct object position. The order which has the clitic inside the accusative marker is completely ungrammatical.

(62) Ami Ram-ke-o/*Ram-o-ke dekhlam
I-NOM Ram-ACC-EMPH see-PAST1ST
'I saw Ram-also.'

This behaviour is in marked contrast to the k-word forms, where the k-word plus *-o* is obligatorily inseparable in many dialects. The following sentence shows an analogous situation to (62) above, where both the accusative marker and the *-o* particle would be expected on the k-word *ka-* 'who'.

(63) Ami *kao-ke* dekhlam na
I-NOM who-EMPH-ACC see-PAST1ST NEG
'I didn't see anyone.'

All speakers of Bengali accept the EMPH-ACC order with the k-word, while rejecting the corresponding order on an ordinary DP (62).[11] Thus, it seems reasonable to suppose that in the 'k-word+emphatic' cases, we have a distinct lexical item.

Moreover, assuming the narrow scope disjunctive interpretation for 'k-word+*o*' also makes sense of the non-specific indefinite usage mentioned above.

(64) Ram *kotha-o* gælo
Ram-NOM where-EMPH go-PAST3RD
'Ram went somewhere or another.'

[11] In addition, some speakers accept both the *ka-ke-o* and *kao-ke* forms for the above sentence, but there seem to be no speakers who accept only the *ka-ke-o* form.

Ram went to[x_1 place **or**
x_2 place **or**
x_3 place **or**
⋮
x_n place]

$\forall\ x_i \in E$ such that x_i is a place, and where E is the domain of individuals.

Thus, sentence (64) above means that Ram went to some place or other, but it is left completely open and vague where that was. Analysing the *-o* particle as contributing the semantics of conjunction in these sorts of contexts would clearly give the wrong results. If we wish to include the construction in the phenomena to be explained, the analysis of *-o* as a scope marker for the construction of alternatives is forced on us.

In fact, there is crosslinguistic evidence that both possibilities should be available in natural language and that the choice between the conjunction of 'alternative propositions', and narrow scope 'alternative DP' construction is correlated with the boundedness of the emphatic particle and with the possibility of the non-specific construction in particular. Consider the situation in Malayalam, a Dravidian language spoken in South India. In Malayalam we find the same general clustering of uses, but the emphatic clitic is not so tightly attached to the wh-in-situ element. As the following examples show, it may appear outside of case inflection, and attaches not necessarily to the wh-in-situ element itself ((65) is ungrammatical), but to the DP that *contains* the wh-in-situ element in specifier position (66).

(65) *jooṇ [$_{DP}$ aa$\bar{r}$uṭeetey-*um* ammaye] nuḷḷiyilla
John Wh+they -GEN-UM mother-ACC pinched-NEG
'John didn't pinch anyone's mother'

(66) jooṇ [$_{DP}$ aa$\bar{r}$uṭe ammayey-*um*] nuḷḷiyilla
John wh+they-GEN mother-ACC-UM pinched-NEG
'John didn't pinch anyone's mother.'

Like the Bengali clitic *-o*, the Malayalam *-um* is used to mean 'also' or 'and' elsewhere in the language.

(67) kuṭṭi $\bar{r}$aamaney-*um* kaṇṭu
child ram-ACC-UM saw.
'The child saw Ram too.'

(68) jooṇ-*um* meeri-y*um*
John-UM mary-UM
'John AND Mary'

However, in this language, the wh-in-situ item together with the emphatic particle *cannot* be used in a non-specific indefinite usage.

(69) *moohan *eeta* maañña*y*-*um* tinnunnu
Mohan which-UM mango eat-PRES
'*Mohan is eating some mango or other.'

Instead, we need to use the clitic -OO in these contexts.

(70) moohan **eetoo** maañña tinnunnu
Mohan which-OO mango eat-PRES
'Mohan is eating some mango or other.'

Predictably, the marker -OO has the meaning of 'or' elsewhere in the language.

Thus, here we have a language in which our original conjunctive analysis seems to work unproblematically, with the alternatives being constructed at the propositional level, and with the *-um* particle contributing an inclusive, or conjunctive interpretation. The relative freedom of attachment of the emphatic particle correlates with the impossibility of this particle being used in a non-specific indefinite construction (in contrast to Bengali).

To summarise, then, the view of k-words in Bengali as triggers for the construction of a set of semantic alternatives in the sense of Rooth (1994) can also make sense of the negative polarity and non-specific indefinite uses of the 'k-word + emphatic'. The analysis involved interpreting the emphatic marker in this language as a 'scope marker' of a sort, marking out the constituent which is to be the basis for the construction of those alternatives. Because of this function, I will refer to the 'k-word + emphatic' in Bengali as an 'alternative DP'.

5.4 Free Choice 'Any' Contexts

Turning now to the free choice any and so-called 'generic' contexts in which the 'alternative DP' appears. We find that 'alternative DPs' show up in sentences which could be analysed as covert generics as in (71) below.

(71) Je *ke-o* 'swim' korte pare
DEM who-EMPH swim do-INF can-PRES3RD
'Anyone can swim.'

Lahiri (1995) analyses this type of use with reference to a non-overt generic operator which binds the indefinite. In his analysis, the construction is legitimate because no implicature clash is produced with the generic interpretation (since it is non-upward-entailing). However, it is an initially suspect analysis for the Bengali construction showed here because of the obligatory occurrence of the demonstrative particle *je*, since the nominal in question no longer looks like an indefinite at all, and therefore should not be bindable by a non-overt generic operator. Moreover, the 'alternative DP' also appears standardly in imperatives, in a context where ordinary indefinites are impossible.

(72) je *kon-o* am ṭolo
that which-EMP mango take
'Take any mango.'

The problem with imperative contexts is firstly that they are very poorly understood from a semantic point of view. Relating the imperative to truth conditions will be indirect at best. Nevertheless, under the analysis where we interpret the forms in question as 'alternative DPs', we immediately get a formulation which seems to capture the force of the imperative.

Take [this$_1$ **or**
this$_2$ **or**
this$_3$ **or**
⋮
this$_n$ mango].

In other words, the speaker is articulating a command which embodies an explicit *choice* of mango. In this usage, there is an extra element, namely the word *je*. This has a straightforward interpretation elsewhere in Bengali as a demonstrative DP, usually cataphoric to something later in the linguistic context. The word (not present in Hindi in these contexts) is actually the head of a partitive DP which contains the 'alternative DP' embedded within it. The DP 'je kon-o am' means merely 'one particular one of [x_1 or x_2 or ... or x_n]'. The necessity for this particle in Bengali and not in Hindi is plausibly related to Bengali's status as a classifier language, where inanimate nominals are not themselves referential but must be used with a classifier clitic to refer to a specific entity. The imperative 'choice' construction instructs the interlocutor to choose 'one' mango in particular out of the choice set. Whereas the meaning 'one unit of' is readily available without classifier support in languages like English, Bengali requires the use of a partitive construction with the specific *je* as the head[12]. Thus, the more accurate representation of the imperative shown above would be as shown below.

Take one of [this$_1$ **or**
this$_2$ **or**
this$_3$ **or**
⋮
this$_n$ mango].

As I will argue in the next section, the notion of 'choice' here is crucial to understanding the function of the 'alternative DP'. Indeed, rather than being a peripheral

[12] See Ramchand (1992) for a detailed discussion of the properties of the Bengali nominal system.

construction to which a successful analysis might be extended (as in Lahiri (1995)), the intuition here is that the notion of 'free choice' is primary. In fact, I would argue that the so-called 'generic' contexts (as in (71) above) which are also supposed to contain these words, are not generic contexts at all, but special cases of the 'free choice environment'. In other words, I argue that there is a difference between a true generic sentence such as the English (73) below, and a 'free choice' sentence (74).

(73) Doctors will tell you that Vitamin C is good for you.

(74) Any doctor will tell you that Vitamin C is good for you.

Intuitively (74) does not mean quite the same thing as (73). The hypothesis is that (74) is actually a covert imperative/choice sentence and means something like:
'Choose any doctor: that doctor will tell you that Vitamin C is good for you.'
The impression of genericity is obtained because of the pragmatics of the choice function: the speaker is so sure that *all* doctors will behave this way, she is offering you a completely free choice and is confident of the outcome. Thus the Bengali sentence (71), would be represented as the following.

Choose one$_i$ of [person$_1$ **or**
person$_2$ **or**
person$_3$ **or**
$\vdots$
person$_n$]: that$_i$ person can swim.

Interestingly, this analysis conforms with the functioning of the *je* particle elsewhere in the language as the cataphoric pronoun in correlative constructions (see Srivastav (1990) for a discussion of the correlative construction in Hindi, a related language).

This of course, is not yet an analysis of the imperative, since I have re-used the imperative form in the representations given above. However, whatever the semantic analysis of imperatives turns out to be, it is independent of what I am claiming here. In other words, the functioning of the 'alternative DP' is embedded within the imperative/choice function and is independent of the technology we might eventually choose to relate the imperative explicitly to truth conditions (if indeed that is desirable). I will discuss the imperative speech ac t in more detail in the next subsection, in relation to the distribution of the k-word.

Reducing the 'generic' context to another one, the one which we do not really understand, I am forced to give up the part of the explanation of the distribution of k-words that actually seems to *work* for Lahiri (1995), namely the non-upward entailingness of the non-overt generic operator. I nevertheless believe it is the correct move. In the final subsection I turn to a discussion of the restriction of the

k-words to the particular contexts that they actually do appear in and no others, and in this way hope to motivate the 'imperative/choice' analysis of the 'generic' structures shown in this section.

5.5 Accounting for the Distribution of the 'K-word'

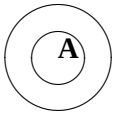
This paper started with the observation that k-words in Bengali occur in a certain cluster of environments. The first problem lay in giving an interpretation for these words that would account for their use in all these environments— a 'unified' semantics for the k-word. We now face the other side to this problem: that of providing an account of the *restriction* of the k-word to these particular environments and no others.

If we consider the account given so far, we see that the representation of the 'alternative DP' in particular as a 'disjunction of alternative instantiations' gives the impression that it should be available in a much wider number of contexts than it actually is. This impression is misleading. It needs to be remembered that the 'disjunction' I am referring to is not present at the level of LF in its restricted sense, but is a pragmatic operation of quite restrictive properties. This means first of all, that the instantiations in question are not specific or referential. The analysis I have given is *not* equivalent to a literal disjunctive DP. In the discourse, the utterance of a sentence containing these words does not *in itself* justify the interlocutor in adding a particular individual to the discourse representation. Nor does the sentence contribute information about any particular referent already in the discourse. Because the k-word does not have an 'ordinary semantic value' in Rooth's (1994) sense, it is incapable of functioning within a discourse in any of these ways.

We can consider an analogy to the case of 'free variables', which are not themselves interpretable, except in the context of an operator that binds them in the semantic representation. We cannot construct a proposition in the semantics if a 'free variable' remains 'free'. Similarly, we cannot construct a proposition from one of these k-words in the absence of additional sentential or discourse 'assistance'. In the case of free variables, we find that there are overt operators which function to bind them, and in the absence of overt operators, natural language invokes a default 'existential closure' to bind the variable and construct a definite proposition at the level of discourse representation (Heim 1982; Kamp 1981). Similarly, for k-words there are discourse level strategies that construct definite propositions from input that is in fact quite underdetermined for propositional content.

Specifically, we need to explain why downward entailing environments are legitimate environments for this 'alternative DP'. The answer is quite straightforward— these are precisely the environments which license entailments that will construct a proposition from a non-specific set of alternatives. Consider the defining property of a downward entailing context: the truth of a predicate with reference to a particular set entails the truth of the predicate with reference to any subset of that set. In other words, for clause-mate negation, we find the following sorts of entailments.

(75) John didn't eat fruit today. $\Rightarrow$ John didn't eat mangoes today.



If A = { x | fruit(x) } and B = { x | mango(x) },
then within a downward entailing environment P(A) $\Rightarrow$ P(B).

In the case of an 'alternative DP' that I have assumed to be the nature of the k-word+emphatic in Bengali, we have a representation which includes a vague set of alternatives in a standard DP position. This set is just the set of all entities in the context restricted only according to the nature of the k-word (i.e. whether it is the k-word for people, things, places, times etc.). This large set contains the subsets which consist of every single individual entity possible in the context. In other words,

$\forall x, x\ a\ (k)entityinE$
$\{x\} \subset [\![[_{DP}kword - o]]\!]^f$
where E is the domain of individuals

Thus, in a downward entailing environment, the interlocutor can construct, by implication, all the definite propositions corresponding to the insertion of every different entity and set of entities in the context. Therefore, the entailment licensed by the construction itself suffices to allow the construction of definite propositions. This, I claim is the source of the acceptability, and indeed the general use of 'alternative DPs' in downward entailing environments.

As one might expect, a declarative utterance is infelicitous if it cannot be used to entail a definite proposition. Thus, we find the general use of the 'alternative DP' is not available in non-downward entailing contexts. My account here differs from Lahiri (1995) on many levels, but it is worth pointing out specifically that my account predicts a positive correlation with 'downward entailingness', rather than a negative restriction to 'non-upward entailingness'. The 'generic' contexts as we will see below are accounted for rather differently.

Because of the explicitly pragmatic explanation of the use of the 'alternative DP' that I have given, we might expect this prohibition to be lifted under particular, favourable discourse conditions. This, I claim is precisely what underlies the non-specific indefinite usage found in Bengali and repeated below in (76).

(76) Ram *kotha-o* gælo
Ram-NOM where-EMPH go-PAST3RD
'Ram went somewhere or another.'

Here, we find that the sentence can only be used if the interlocutor is being specifically told that the speaker is unaware of the actual 'place' that Ram has gone to. In such situations, where the uncertainty is explicitly stated as being a feature of the speaker's knowledge state (and not of the world), the interlocutor is allowed to infer a particular entity that would satisfy the proposition (the equivalent of default existential closure for an unbound variable), even though the utterance itself does not sanction that entailment.

In other words, we can understand all the declarative contexts in which these kword forms are used with reference to the notion of uncertainty or non-specificity. They are found in contexts where no specific instantiations are actually known, and where the actual denotations of individuals are irrelevant to the proposition being presented. Further, they must be in contexts where the interlocutor can pragmatically infer a definite proposition based on the declarative utterance: in the case of downward entailing environments this comes straightforwardly from the linguistic context; in the case of non-specific indefinites, it comes from very particular discourse information.

Now it becomes clearer why k-words should appear in non-declarative contexts. The problem with declarative contexts is that a definite proposition must be expressed. With interrogative and imperative contexts, no specific proposition is being directly expressed. It is therefore not surprising that these types of sentences would be 'normal' and comfortable linguistic situations in which to use these forms. In particular, if we look at imperatives which offer the interlocutor a pragmatic choice of alternatives, it is not surprising that the 'alternative DP' would be used to express this choice. Because no declarative proposition is being expressed, there is no infelicity involved in using the kword in an imperative. The pragmatics of offering the interlocutor a 'choice' makes the use of a DP which constructs a whole set of alternatives particularly felicitous.

Similarly, with questions, we find the kword (without emphatic particle) being used. This involves the construction of a set of alternative propositions. The pragmatics of questions involves a request to the interlocutor to specify the 'true' alternative propositions within that set. Once again, the lack of 'propositionality' of the k-form is no disadvantage here.

6 Conclusion

To summarise, I have given an account of k-words in Bengali which tries to make sense of all their contexts of use. The analysis has involved an exploitation and extension of Rooth's (1994) 'alternative semantics'. I have argued that k-words in Bengali uniformly trigger the construction of a set of 'alternatives' in this Roothian sense. Without the particle suffix attached, these alternatives are the standard alternative propositions such as are found in Rooth's treatment of contrastive focus. With the suffix attached, I argue for the construction of an 'alternative DP', where the suffix attachment marks the scope of 'alternative construction'. What

both these uses have in common is the existence of a 'focus semantic value' in Rooth's terms (or perhaps more generally here, an 'alternative semantic value'), in the *absence* of an actual 'ordinary semantic value'. This fact makes these forms unsuitable for use in standard declarative contexts except under certain linguistic and discourse conditions. I argued that downward entailing contexts specifically provide a linguistic environment which can pragmatically convert this 'alternative semantic value' into definite propositional context. In addition, non-propositional speech acts such as questioning and imperative 'choice' contexts were also found to be felicitous with 'alternative semantic values'.

The contexts in which the k-words are found can thus be restricted to the following.

(a) Interrogatives (wide scope propositional 'alternatives')

(b) Imperative 'choice' contexts (narrow scope 'alternative DP')

(c) Downward entailing environments (narrow scope 'alternative DP')

(d) Non-specific indefinite uses (narrow scope 'alternative DP').

In restricting the use of the 'alternative DP' in particular, only to these environments, I have to assume that the so-called 'generic' uses pointed out in the literature (Lahiri (1995)) are not constructed via a non-overt generic operator, but are special cases of (b) above.

This account provides a unification of the interrogative contexts with the negative polarity ones in a way that has not been explicitly attempted so far in the literature. It also tries to give an explanation for why these k-words have what I have informally called 'uncertainty' semantics. If the analysis is on the right track, it means that Rooth's (1985, 1994) idea of 'alternative semantics' is rather more important in natural language than perhaps is traditionally assumed. In particular, it means that natural languages can possess lexical indefinites specifically designated as triggering alternative semantics. While this addition to linguistic ontology might seem like a drastic move, I believe it provides the simplest and most elegant account of a wide range of phenomena in languages which contain wh-in-situ elements.

7 Appendix: Crosslinguistic Data

13

7.1 Bengali

USAGE 1: Questioning in Situ

(77) Tara **kothae** jacche?
They-NOM where-LOC go-PRES.PROG3
'Where are they going?'

USAGE 2: Negative Polarity

(78) Tara **kotha-o** jay na
they-NOM where-NOM go-Pres3 NEG
'They don't go anywhere.'

(79) Tara **kokhon-o** śekhane jay na
They-NOM when-EMPH there go-Pres3 NEG
'They never go there at all.'

(80) Ram **kon-o** am khay na.
Ram-NOM which-EMP mango eats not
'Ram doesn't eat any mangos.'

USAGE 3:Free Choice Any

(81) Ram je **kon-o** am bhalobaśe
Ram-NOM that which-EMP mango likes
'Ram likes any mango.'

(82) **Kon-o** ækṭa am nao
which-EMP one mango take
'Take any mango.'

7.2 Hindi/Urdu

USAGE 1: Questioning in Situ

(83) Bacce-ne usko maara hai
child-ERG he-ACC hit
'The child hit him.'

[13] I would like to thank the following people for help in furnishing the data for this section: Shankar Raman for the Bengali, Miriam Butt for the Hindi, K.P. and Tara Mohanan for the Malayalam and Shuichi Yatabe for the Japanese.

(84) Bacce-ne **kis-ko** maara hai
child-ERG who-ACC hit
'Who did the child hit?'

USAGE 2: Negative Polarity Environments

(85) Anjum **kab-hii** nahii skul jaataa hai
Anjum when-EMPH not school goes
'Anjum never goes to school.'

(86) Anjum **kahii** nahii jaataa hai
Anjum where-EMPH not goes
'Anjum doesn't go anywhere.'

USAGE 3: Free Choice Any (no demonstrative present)

(87) **koy-hii** aam lo
which-EMPH mango take
'Take any mango.'

7.3 Malayalam

USAGE 1:Questioning in Situ

(88) awa r̄E **ewiṭe** pooyi
they-NOM where go-PAST
'Where did they go?'

(89) awa r̄E **eppo** pooyi
they-NOM when go-PAST
'When did they go?'

USAGE 2: Negative Polarity Environments

(90) awa r̄E **ewiṭ ey-um** pooyilla
they-NOM where-emph go-PAST NEG
'They didn't go anywhere'

USAGE 3: Free Choice Any

(91) Moohan **eet̲E** maaññay-um t̲innum
Mohan which mango-EMPH eat-fut
'Mohan will eat any mango.'

(92) **eet̲E** maaññayaaṇE weeṇṭat̲engkil eṭuttu koḷḷu
which mango-is want-if take permission
'Take whichever mango you want.'

7.4 Japanese

USAGE 1: Questioning in Situ

(93) Kare-wa **doko** ni itta (no).
he-TOP where LOC go-PAST (Q).
'Where did he go?'

USAGE 2:Negative Polarity Environments

(94) Kare-wa **doko ni mo** ik-anakatta.
he-TOP where LOC EMPH go-NEG/PAST
'He went nowhere.'

USAGE 3: Free Choice Any

(95) John-wa [**dono** mangoo mo] suki-da
John-TOP which mango-EMPH] like
'John likes any of these mangos.'

(96) **Dono** mangoo de mo] motte itte ii
which mango COP-INF EMPH have-INF go-INF ok
'Take any mango.'

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