Functions of Bangla Classifier -*ra* in Forming Generic Sentences

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Abstract

Although the plural classifier -*ra* is expected to be present with all [+human] NPs and optional with the non-human animate NPs in generic statements, it behaves irregularly. It is absent in human denoting nominals *manuʃ/lok* 'man'. But when the same noun is headed by an adjective, its presence is mandatory. Similar irregularities are observed in case of non-human animates also. The paper takes an interesting turn when it is observed that the function of the classifier is actually dependent on the concepts of kind and subkind terms, as used in the language. The classifier which is mandatory with subkind terms, is absent in case of superkind terms. We arrive to an intriguing conclusion about the perception of 'concepts' and 'kinds' in Bangla as opposed to the standard scientific taxonomic categorisation of species.

1 Introduction

The Bangla classifier -*ra* is number neutral, occurs more evidently with human nouns, proper names, pronouns and can also occur with numerals.

(1) c^{h}ele-ra k^{h}elc^{h}e
boy-CLF play.PRS.PROG
'Boys are playing.'
(Common [+human] noun)

(2) Riya-ra aʃbe
Riya-CLF come.FUT
'Riya and others will come.'
(Associative interpretation)

(3) o/am/tom-ra k^{h}ub b^{h}alo
3/1/2-PL.CLF very good
'They/We/You are very good.'
(Pronoun)

(4) bacca-ra tin-jon edike eʃo
kid-CLF three-CLF here come.PRS
'You three kids, come here.'
(Number Neutral)

The primary function of -*ra* is that it marks plural animate nouns. Dayal (2014) formulates the semantic notation of -*ra* as the following:[2]

(5) $[\![-ra]\!] = \lambda x^{k} : \forall z[z \leq_{i} x \rightarrow \text{animate}(z)] \; . \; [x]$

It has been established so far that Bangla generic sentences comprising human noun subjects are necessarily formed with the classifier -*ra*.

The following examples show the position and compulsory occurrence of -*ra*.

(6) c^{h}ele-ra lɔmba hɔy
boy-CLF tall be.PRS
'Boys are tall.'

(7) mee-ra budd^{h}imoti hɔy
girl-CLF intelligent be.PRS
'Girls are intelligent.'

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[2]See also Biswas (2012)

For non-human animate nouns -*ra* is optional.

(8) pak^{h}i akaʃ-e ore
bird sky-LOC fly.PRS
'Birds fly in the sky.'
(Without classifier -*ra*)

(9) pak^{h}i-ra akaʃ-e ore
bird-CLF sky-LOC fly.PRS
'Birds fly in the sky.'
(With classifier-*ra*)

However, the data in the following sections suggest something more than that. In this paper, I intend to explore some exceptional properties of the classifier -*ra* in forming generic sentences.

2 Analysis

Here is an observation about Bangla generic sentences formed with [+human] subjects:

(10) c^{h}ele-ra dayittoban hɔy
boy-CLF responsible be.PRS
'Boys are responsible/dutiful.'

(11) sromik-ra porisromi hɔy
labourer-CLF hardworking be.PRS
'Labourers are hardworking.'

(12) baŋali-ra miʃti k^{h}ete b^{h}alobaʃe
Bengali-CLF sweets eat love.PRS
'Bengalis love to eat sweets.'

(13) mee-ra bicokk^{h}on hɔy
girl-CLF sensible be.PRS
'Girls are sensible.'

All the above NPs in the subject position combine with the classifier -*ra* to produce generic sentences. But in the following examples, the attachment of the classifier -*ra* sounds strange.

(14) manuʃ(*-ra) moronʃil (hɔy)
man(*-CLF) mortal (be.PRS)
'Man is mortal.'

(15) lok-e(*-ra) ki na bɔle!
people-A(*-CLF) what NEG say.PRS
'What is there that people don't talk about!'[3]

The bare form in sentence (14) and (15) is the only correct grammatical generic construction with the NPs *manuʃ/ lok* 'man'. Adding the classifier with the above NPs would form unacceptable sentences. *manuʃ* and *lok* refer to a particular class of species: man. While forming a generic sentence referring to man as the kind as a whole the classifier -*ra* is dropped. Examples (10) to (13) are generic sentences which refer to some subclass of the human kind (boy/ girl/ Bengali/ labourer). In such cases dropping the classifier leads to unacceptable sentences.

Thus it is observed from the given data that the classifier -*ra* only takes a subkind term as its complement while forming generic sentences referring to human nouns.

[3]Although most native speakers I had consulted with (including me) found sentence (15) to be unacceptable when the classifier -*ra* is attached with *lok* 'man', a few speakers found it acceptable. A probable reason might be a dialectal/regional variation of the language they are using or influence of any other language used in their vicinity. However, the prediction about sentence (14) has been approved by everyone without any objections. So, considering the few exceptions, even if *lok* 'man' is not acknowledged as an unvarying salient kind term in Bangla, *manuʃ* 'man' is accepted as a conventional kind term denoting [+human] class consistently.

Let us observe the generic sentences referring to non-human animate nouns:

(16) gʰora(*-ra) gʰaʃ kʰay
horse(*-CLF) grass eat.PRS
'Horses eat grass.'

(17) kukur(*-ra) grihopalito poʃu
dog(*-CLF) domestic animal
'Dogs are domestic animals.'

The addition of the plural classifier with the noun is not appropriate in such sentences. If we frame generic sentences referring to the subkind of these species, it is observed that the presence of the classifier is preferable:

(18) afrikan ʃingʰo-ra eʃian ʃingʰo-der tʰeke beʃi hiŋsro
African lion-CLF Asian lion-CLF.GEN than more cruel
'African lions are more dangerous/cruel than Asian lions.'

This anomaly can probably be solved if we observe the conventional kind denoting terms in Bangla.

2.1 Kind and Subkind

The inventory of kinds can be language dependent. The terminal points at which the taxonomic scale of hierarchy needs to be cut off in a language might be defined according to the social or cultural history of the language and its use in various situations. This is because the perception of kind and subkind terms, is a product of folk science (biology, psychology, physics etc.) rather than the scientific taxonomic categorisation of species which was discovered much later than the concept formation of kinds and species in human minds.

Singular generic NPs are more abstract compared to plural generics. So, plural generics can be used as simple generalisations based on sufficiently many object level verifications which need not be a characterising property of the kind. But the singular generic can only be used in contexts where the taxonomy in which the kind term belongs is salient, as mentioned by Dayal(1992).

The oddity of the attachment of the classifier -ra with [+human] subjects like *manuʃ* 'man', and *lok* 'man' and non-human subjects like *gʰora* 'horse', *ʃingʰo* 'lion', *kukur* 'dog' etc. provides us a hint that in Bangla, perhaps, the 'superkind' variety in case of human nouns could be *manuʃ* 'man' which includes all the subkinds or subclasses of human as mentioned in sentences (10-13). In case of nonhuman kind terms, different species of animals like horse, lion, tiger, dog etc. serve as the superkind variety while their subspecies are considered to be the taxonomic subkinds.

Thus we get our cue from the above data that in generic sentences the existence of the plural classifier is unacceptable when the subject NP(human/non-human) refers to an entire class/kind of species. But while symbolizing subspecies of the class or a particular subset of the kind, the classifier *-ra* is mandatory.

In Chinese, common noun constructions are more transparent than in Bangla. Krifka (1995) takes the noun *xiong* 'bear' as an example. It can refer to the kind Ursus, some specimens of this kind (indefinite), a construction with the measure phrase (herd) and two numeric classifier constructions containing a specified number of individual specimens of Ursus or subspecies of Ursus.

The last classifier construction referring to the subspecies of the kind Ursus is stated here as Example (19).

(19) san zhong xi'ong
three CLF bear
'three bears' (species)

The construction (19) is referring to three subspecies of the bear kind (Ursus) for example, polar bear, grizzly and the panda.

In order to formulate semantic structure for the same he introduces a number of operators:

(20) The realisation relation R_i: where $R_i \subseteq$ OBJECT X KIND, if k is a kind, then $\lambda x R_i(x,k)$ applies to specimens or individual sums of specimens of k in a possible world i.

(21) The taxonomic relation T_i : where $T_i \subseteq$ KIND X KIND, $\lambda x T_i(x,k)$ applies to subspecies or individual sums of subspecies of k in i.

(22) The operator KU ('kind unit') : a function which, for each possible world, when applied to a kind, yields a measure function for the number of subspecies of that kind; for example, if x consists of three bear species (say, the polar bear, the grizzly, and the panda), then KU(Ursus)(x) =3. Therefore construction(19) is formulated in the following way as (23).

(23) $[\![_{NP}$san zhong xiong$]\!]$:$\lambda i \lambda x[RT_i(x,Ursus) \wedge KU_i(Ursus)(x) = 3]$

Since in this case only taxonomic function is applicable, the realisation relation can be omitted and the structure is modified as (24):

(24) $[\![_{NP}$san zhong xiong$]\!]$:$\lambda i \lambda x[T_i(x,Ursus) \wedge KU_i(Ursus)(x) = 3]$

In Bangla Generic constructions,the semantic structure of the classifier -*ra* could be formulated with the help of these operators. Following Krifka's analysis and Dayal's fomulation, the semantic structure of the classifier -*ra* in (5) is modified as (25):

(25) $[\![-ra]\!] = \lambda y \lambda x \lambda P \lambda i[\forall z[z \leq_i x \rightarrow$animate(z)$] \wedge T_i(x,y)][P_i(x)]$

- The complement should be animate.
- The complement should be a subkind(x) of a kind(y) species i.e., 'x' (SUBKIND) $\subseteq$ 'y' (KIND).

2.2 Concept and Subconcept

The addition of *-ra* is mandatory when the same NPs *manuʃ* and *lok* are preceded by attributive adjectives or are in possessive constructions. Dropping the classifier in such cases would only infer a singular construction if at all that sounds acceptable to the native speakers.

(26) gorib manuʃ-ra ɔʃohay hɔy
poor man-CLF helpless be.PRS
'Poor men are helpless.'

(27) bɔyoʃko lok-e-ra eta biʃʃaʃ kɔren
old people-A-CLF this believe do.PRS
'Old people believe in this.'

(28) kolkata-r lok-e-ra g^hurte b^halobaʃe
Kolkata-GEN people-A-CLF travel.INF love.PRS
'People from Kolkata love to travel.'

In case of non-human animate NPs:

(29) kalo g^hora-ra beʃi jore c^hote
black horse–CLF more fast run.PRS
'Black horses run faster.'

(30) dɔg-ʃo-r kukur-ra k^hub b^halo trained hɔy
dog-show-GEN dog-CLF very well trained be.PRS
'The Dogs of the dog show are very well trained.'

Krifka (1995) introduced a notion that is more general than that of a kind. So far, kinds were considered to be abstract entities that are well established in the background knowledge of the speaker and the hearer which were organized in taxonomic hierarchies. He assumed a new type of entities, 'concepts'. Similar to kinds, concepts are abstract entities related to real objects. Concepts may stand in a subconcept relation; as, e.g., a man wearing blue clothes is a man, but not necessarily in a taxonomic relation with man (it is not a subspecies of man but rather a subconcept of the concept of 'man').Something like this distinction was developed by Pelletier and Schubert (1989), who assumed both 'conventional' kinds (kinds) and 'formal' kinds (concepts). Krifka used 'kind' as referring to conventional kinds and 'concept' to denote the unconventional kinds. He considered kinds to form a subset of the more comprehensive sets of concepts.

(31) KIND $\subseteq$ CONCEPT.

Thus he redefines the R_i and T_i relations in this broader framework in the following way:

(32) $R_i \subseteq$ OBJECT X CONCEPT

He introduced a subconcept relation S_i :

(33) Subconcept relation $S_i \subseteq$ CONCEPT X CONCEPT

and redefined T_i as a subconcept relation restricted to kind. For example, the grizzly is a taxonomic subspecies of Ursus, so it is a sub-kind of it. It is also a sub-concept of the concept Ursus restricted to kind.

The adjective and the possessor in the NPs of the given Bangla generic sentences (26-30) restrict the head nouns (*manuʃ* 'man', *lok* 'man', *gʰora* 'horse', *ʃingʰo* 'lion', *kukur* 'dog' etc.) to a subconcept of the concept. According to this broader framework it is observed that the occurrence of classifier *-ra* in NPs (*manuʃ* 'man', *lok* 'man', *gʰora* 'horse', *ʃingʰo* 'lion', *kukur* 'dog' etc) fronted by attributive adjectives and possessor expressions is acceptable as the NPs are referring to a subconcept of a greater concept or a superconcept. Thus the formulation (25) could be modified as:

(34) $[\![\text{–}ra]\!] = \lambda y \lambda x \lambda P \lambda i[\forall z[z \leq_i x \rightarrow \text{animate}(z)] \wedge S_i(x,y)][P_i(x)]$

• The complement should be animate.
• The complement should be a subconcept of a concept.i.e., 'x' (SUBCONCEPT) $\subseteq$ 'y' (CONCEPT).

Hence, the aforementioned sentence (10) can be interpreted as follows.

(35) $[\![(10)]\!] : \lambda y \lambda x \lambda P \lambda i\ [\forall z[z \leq_i x \rightarrow \text{animate}(z)] \wedge S_i(x,y)][P_i(x)](^\cap \text{manuʃ})\ (^\cap c^h\text{ele})(\text{dayittoban hoy})$

$= \lambda x \lambda P \lambda i\ [\forall z[z \leq_i x \rightarrow \text{animate}(z)] \wedge S_i(x,(^\cap \text{manuʃ}))]\ [P_i(x)](^\cap c^h\text{ele})(\text{dayittoban hoy})$

$= \lambda P \lambda i\ [\forall z[z \leq_i (^\cap c^h\text{ele}) \rightarrow \text{animate}(z)] \wedge\ S_i((^\cap c^h\text{ele}),\ (^\cap \text{manuʃ}))][P_i(^\cap c^h\text{ele})](\text{dayittoban hoy})$

$= \lambda i\ [\forall z[z \leq_i (^\cap c^h\text{ele}) \rightarrow \text{animate}(z)] \wedge\ S_i(^\cap c^h\text{ele}, ^\cap \text{manuʃ})][\text{dayittoban hoy}_i(^\cap c^h\text{ele})]$

Since '$^\cap c^h$ele' is animate and is a subconcept of '$^\cap$manuʃ" , the presupposition is satisfied and the sentence is acceptable.The Kind term *manuʃ* being the superconcept does not satisfy the presupposition. Hence *-ra* has to be dropped in sentence (14) and the bare singular is sufficient to interpret a generic reading defining a kind term referring to an entire species.

The data provides an interesting insight about the way notions of kind and their subkinds are perceived in Bangla. However, further studies regarding conventional and unconventional kinds of Bangla as well as other languages must be accomplished to construct a comprehensive conclusion.

3 Optionality of *-ra* in Non-Human Animate NP

Let us observe the three examples of English generic sentences that Dayal (2004) and Dayal (2012) discuss from Carlson (1977)'s paper:

(36) a. Dinosaurs are extinct.

b. The dinosaurs are extinct.

c. The dinosaur is extinct.

Sentence (36-a) possessing the bare plural refers to the kind level species dinosaur and means that the species is extinct. Sentence (36-b) with the definite plural is not referring to the kind but to its members. For example, there are subspecies of the species dinosaurs like stegosaurus, tyrannosaurus etc. the sentence actually means that these subspecies are extinct. The sentence would be unacceptable if the species did not have any subkinds. For example, one cannot say: 'the dodos are extinct' as dodos do not have any subkinds. Sentence (36-c) with definite singular, however, has a similar interpretation like sentence (38) due to the kind level predicate 'extinct'. If we compare the first two sentences proposed by Carlson with similar Bangla sentences, we observe the following:

(37) dinosɔr bilupto hoye gac^{h}e
dinosaur extinct be go.PRF
'Dinosaurs are extinct.'

(38) dinosɔr-ra bilupto hoye gac^{h}e
dinosaur-CLF extinct be go.PRF
'The dinosaurs are extinct.'

The semantic structure of (37) and (38) is stated in (39) and (40) respectively:

(39) λi[extinct$_{i}$($^{\cap}$dinosaur)]

(40) $\lambda i \lambda x$[$\forall z$[$z \leq_{i}$ x$\rightarrow$animate(z)]$\wedge$T$_{i}$(x,$^{\cap}$dinosaur)] [extinct$_{i}$(x)]

We can say sentence (38) in a context like the following:

(41) agee prit^{h}ibi-te ɔnek d^{h}ɔron-er dinosɔr dek^{h}a jeto. æke æke dinosɔr-ra prit^{h}ibi
earlier earth-LOC many kind-PFV dinosaur see go.PRF. one one dinosaur-CLF earth
t^{h}eke bilupto hoye gac^{h}e.
from extinct be go.PRF.
'Earlier many kinds of dinosaurs were present on earth. Gradually the dinosaurs became extinct.'

So (37) being a singular generic kind denotes the kind itself whereas (38) is referring to the different subspecies of dinosaurs rather than the kind dinosaur as a whole due to the presence of the plural classifier *-ra*.

Let us suppose there are three subspecies of the species dinosaur like Stegosaurus(S), Tyrannosaurus(T) and Ankylosaurus(A). The sentence expresses that these taxonomic subspecies are extinct. Following Dayal (2004)'s formulation sentence (38) can be interpreted as:

- DINOSAURS={S,T,A}
- Becoming extinct(ιX[{(S+T+A), (S+T), (T+A), (S+A), S, T, A}(X)])

Thus the plural predicate *dinosaur-ra* denotes the closure under sum formation of the subkinds mentioned in the context. The sentence would be unacceptable if the species did not have any subkinds.

This further asserts my prediction that the classifier *-ra* attaches only while referring to subconcepts whereas the bare singular refers to the greater concept. The distinction is clearer when we replace the kind term dinosaurs with dodos.

(42) dodo bilupto hoye gac^{h}e
dodo extinct be go.PRF
'Dodos are extinct.'

(43) *dodo-ra bilupto hoye gac^{h}e
dodo-CLF extinct be go.PRF
'The dodos are extinct.'

The semantic structure of (42) and (43) is stated in (44) and (45) respectively:

(44) $\lambda i[\text{extinct}_i(^{\cap}\text{dodo})]$

(45) $\lambda i \lambda x[\forall z[z \leq_i x \rightarrow \text{animate}(z)] \wedge T_i(x, ^{\cap}\text{dodo})]\ [\text{extinct}_i(x)]$

Sentence (43) is unacceptable since dodos do not have any subspecies.

So far, all the examples and derivations incline to my proposal that in generic sentences the Bangla animate kind denoting plural classifier *-ra* attaches only with subconcepts or subkinds, and when it attaches with a kind term, the classifier returns subkinds or subconcepts of the kind/concept. However, the confusion arises when, to some speakers, the attachment of *-ra* with non-human animates is optional in generic sentences.

3.1 Collective versus Distributive

Even though kinds are conceptually plural, as stated in Dayal (2004), 'due to implicatures generated by number morphology, plural and singular kinds differ in their ability to allow access to their instantiation sets. While plural kinds are transparent with respect to objects in their extension, singular kinds are atomic entities that do not allow semantic operation from kind to objects.

(46) For all situations s, such that $^{\cup}K_s \neq \emptyset$, $|^{\cup}K_s|=1$ if K is a singular term, and $|^{\cup}K_s| \geq 1$ if K is a plural term.'

Let us look at the following sentences:

(47) *pak^{h}i æke ɔpor-er elaka eriye cɔle
bird each other-GEN territory avoid go.PRS
'The birds avoid each others' territory.'

(48) pak^{h}i-ra æke ɔpor-er elaka eriye cɔle
bird-CLF each other-GEN territory avoid go.PRS
'The birds avoid each others' territory.'

(47) is unacceptable since the bare singular kind term *pak^{h}i* behaves like an atomic unit due to the constraint of number morphology and cannot refer to its taxonomic subsets. However, in (48) *pak^{h}i-ra* being a plural kind term allows access to the members of its set and is referring to different subkinds of the kind *pak^{h}i* 'bird' (like pigeon, crow, sparrow etc.).

To some speakers, both of the following sentences are acceptable.

(49) pak^{h}i akaʃ-e ore
bird sky-LOC fly.PRS
'Birds fly in the sky.'

(50) pak^{h}i-ra akaʃ-e ore
bird-CLF sky-LOC fly.PRS
'(The) Birds fly in the sky.'

Sentence (49) refers to the entire kind bird as a unit and sentence (50) is referring to the sum total of all the subspecies of birds that fly in the sky. Therefore, (47) and (49) indicate a collective reading of the kind. In (48) and (50) the noun form attached with the classifier -*ra* is indicating a distributive reading which is instantiating subsets (and their members) of the set 'birds'. Singular generics are conceptually plural but morphologically marked as singular, and hence they do not allow predication to their individual instantiations. Subgroup interpretations and distributive interpretations are more natural with bare plurals. However my observation and proposal regarding the optionality requires further investigation in order to achieve a concrete distinction.

4 Conclusion

In order to form generic sentences in Bangla, which comprises animate noun referring to an entire concept or kind of species, the classifier -*ra* has to be dropped. To form generic sentences with human nouns referring to a subkind or subconcept of a species, -*ra* is mandatory; while with non-human animate nouns referring to subkind or subconcept, the occurrence of the classifier is preferable. While referring to a non-human animate noun when we are dropping the classifier -*ra* the bare Noun Phrase denotes a collective reading. When the classifier -*ra* is attached it refers to the subconcept of the concept and expresses a distributive interpretation. In Bangla, the superconcept variety in case of human nouns could be *manuʃ* 'man' which includes all the subkinds or subconcepts of human. In case of non-human kind terms, different species of animals like horse, lion, tiger, dog etc. serve as the superkind variety while their subspecies are considered to be the taxonomic subkinds.

The conclusion drawn from this paper is thought-provoking as it provides explanation for an unaccounted data set and a new outlook towards the function of the classifier -*ra* in forming generic sentences in Bangla. It also brings out an interesting insight about the comprehension of kinds and concepts in this language, which will motivate further research in the same area.

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