

# PLURALITY IN A CLASSIFIER LANGUAGE: TWO TYPES OF PLURALS IN BANGLA\*

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## 1. Introduction

This paper presents an account of plurality in Bangla. Two markers, *-gulo* and *-ra*, commonly treated as plural classifiers (Chatterji 1926, Dasgupta 1983, 1985, 2005, Bhattacharya 1999, 2000, 2001, Ghosh 2010, Dayal to appear, submitted) are employed in achieving plural interpretations in Bangla. This paper suggests a dual system of plurality for Bangla: an additive plural is represented by *-gulo*, while *-ra* brings about an associative interpretation. I argue that the two types of plurals are realized in different syntactic structures. Likewise, they are semantically different in their function to achieve the plural interpretations. The analysis presented in the paper is motivated by crosslinguistic comparison with other classifier languages (Chinese, Japanese and Korean), and is supported by independent syntactic and semantic considerations.

Bangla is an atypical South Asian language<sup>1</sup> in that it uses classifiers in order to combine noun phrases with numerals and quantifiers. Classifier languages are generally deficient of fully functional plural markers as is observed in cross-linguistic research (Chierchia 1998, Borer 2005 a.o.). In other words, crosslinguistic research suggests classifiers and number markers generally appear in complementary distribution. Some classifier languages, for example, Japanese and Chinese have been documented to have plural markers. Specifically, Chinese *men* has been argued to be a plural marker similar to English *-s* (Li 1999). Japanese *-tachi/-tati* is suggested to be an associative plural marker (Martin 1988, Ishii 2000, Nakanishi & Tomioka 2004, Hosoi 2005, Kurafuji 2005, Nakanishi & Ritter 2008, Ueda & Haraguchi 2008, Ochi 2012 a.o.). These plural morphemes are characteristically different from regular number morphemes in non-classifier languages. It has been argued on the basis of the fact that these plural morphemes pluralize the proper nouns and result in a group interpretation of the nominal which involves the proper noun and other unspecified members of the group. Such plural markers have been discussed in the literature under the name of ‘associative’ plural. This is different from regular plurals which generally do not co-occur with proper nouns. If they do, the resulting noun phrase refers to a set of plural individuals such that each member of the set is the person denoted by the proper noun. Bangla *-gulo* has been reported to be similar to *men* and *-tachi* (Bhattachaya (undated, referred in Dayal submitted), Ghosh 2010)). However, as we will see, Chinese *men* and Japanese *-tachi* are similar to Bangla *-ra*, rather than *-tachi*, whereas, *-gulo* is more like the Korean plural marker *-tul*. I shall also show that

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<sup>1</sup> Bangla is spoken in the Indian states of West Bengal, Tripura, and in Bangladesh. Bangla represented in this paper is the colloquial variety spoken in West Bengal, near the city of Kolkata.

Bangla *-gulo* and *-ra* are not classifiers, as has been stated in previous literature. Particularly, I suggest that *-gulo* is a plural marker in Bangla, similarly to Bangla *-Ta*, which has been suggested to be the singular number marker (Biswas 2012, see also Dayal to appear, submitted, for a similar proposal). *-gulo* is merged to the number projection. I follow Chacón (2011) in positing Bangla *-ra* to be situated higher than the DP.

This paper is organized as follows: An overview of plurality in classifier languages, with a focus on the distribution of *-gulo* and *-ra* is presented in Section 2. Section 3 lays out the distribution of the two types of plurals morphemes in Bangla, in comparison with other classifier languages. I present the distribution of *-gulo* comparing to the Korean *tul* in section 3.1. In section 3.2, I present a detailed comparison of *-ra* with Chinese *men* and Japanese *-tachi*. Section 4 presents an overview of the system. I put forward the analysis of *-gulo* in section 4.2 and *-ra* in section 4.3. With crosslinguistic implications and outstanding questions in section 5, I conclude in Section 6.

## 2. Plurality in Bangla

Plurality in classifier languages are generally expressed by a combination of classifiers and the numerals. There are several proposals concerning number marking in the classifier languages. Chierchia (1998) presents an account with crosslinguistic insights. According to the *nominal mapping parameter* of Chierchia, the denotations of nouns can be represented by a feature constellation consisting [ $\pm$ argument] and [ $\pm$ predicate] features. Languages without a count-mass distinction are [+predicate, –argument] languages, whereas the classifier languages, are argument-type languages with the features [+arg, –pred]. The denotation of the bare nouns in these languages is similar to that of mass nouns, i.e., they are inherently plural and hence resist plural marking. Therefore, a system of classifiers that function as a ‘type-shifter’ is required for enabling the nouns to appear in argument positions. In an alternative account, Borer (2005) presents a model where classifiers and plurals both perform a ‘dividing’ function on the denotation of a noun, which is characterized by a mass-like property. Thus, if languages have both plural marking and classifiers, it is predicted that they are in complementary distribution. Supporting evidence are found in Persian (Gomeshi 2003) and Western Armenian (Bale & Khanjian 2008) which have both classifiers and plural marking but the two never co-occur in the same nominal phrase.

Bangla *-gulo* and *-ra* have been categorized as classifiers (Dasgupta 1983, Bhattacharya 1999, 2000, Ghosh 2010, Dayal to appear, submitted). Dayal (to appear) further specifies that *-ra* is a number-neutral classifier whereas *-gulo* is a plural classifier. Like any classifier language, Bangla numerals appear with numeral classifiers, as in (1a). However, Bangla *-gulo* does not co-occur with a numeral and a classifier, as in (1b). *-gulo* appears as a suffix to the noun (and never suffixed with a numeral) and the noun phrase is interpreted in plurality, as in (1c). *-gulo* is restricted mostly to common nouns. Only the third person pronoun combines with *-gulo* and the plural pronoun refers to non-human antecedents. *-ra*, on the other hand, combines with all other pronouns.

- (1) a. tin-jon chele      b. \*tin-gulo      chele      c. chele-gulo  
       three-cla boy        three-GULO    boy        boy-GULO  
       ‘three boys’        Intended: ‘three boys’      ‘the boys’

Several exceptions to the generalization that classifiers and plural markers do not co-occur surface in crosslinguistic research. These are well attested in several classifier languages (See Li 1999 for Chinese *men*; Nakanishi & Tomioka 2004 for Japanese *-tachi*; Kim 2005 for Korean *tul*) where a special number morpheme, namely the ‘associative’ plural, co-occurs with the numeral classifiers. These plural morphemes, when combined with proper

nouns and pronouns, result in an interpretation of a ‘group’ consisting of the referent and other members. Similar facts obtain in the distribution of Bangla *-ra*. Generally, *-ra* has been classified, similarly to *-gulo*, as an animate plural classifier (Ghosh 2010, Dayal to appear, submitted), however, Chacón (2011) mentions *-ra* as an associative plural. Much as *-gulo*, *-ra* is also suffixed. Animate common nouns with *-ra* result is interpreted as plurals, as shown in (2a). Proper nouns and pronouns with *-ra* are also interpreted as plurals as in (2b&c). Unlike *-gulo*, *-ra* co-occurs with a numeral and a classifier, as shown below:

- (2) a. chatro-ra (tin-jon) skul-e gElo  
 student-RA three-cla school-loc went  
 ‘Students went to the school.’  
 ‘(The) three students went to the school.’
- b. rito-ra (tinjon) skul-e gElo  
 Rito-RA three-cla school-loc went  
 ‘Rito & others (totaling three) went to the school.’
- c. am-ra (tinjon) skul-e gElo  
 I-RA three-cla school-loc went  
 ‘We (three) went to the school.’

The interpretation of the proper noun with *-ra* is different from the the proper nouns with *-gulo*. The former is interpreted as a group including the referent of the proper noun, whereas, the latter is interpreted as regular plurals. For example, *-gulo* with a first name *rito* as in *rito-gulo* is interpreted as a set of plural individuals where each member of the set is a boy named *Rito*<sup>2</sup>. Thus, we see that Bangla presents a unique case where two morphemes can be attributed to plural interpretation, but quite distinctively, the two plurals refer to different types of plurality. Thus, the question arises, if Chierchia’s conjecture is accurate, why does a classifier language like Bangla display two different types of plural markers? In addition, as contrary to the alternative, why does *-ra* co-occur with numeral classifiers when classifier-stacking is generally prohibited in the language? Probing into the distribution and structure of such a system, I believe, will be rewarding towards the understanding of number marking in classifier languages.

Before discussing the details of the structure and distribution of these two morpho-syntactic markers in Bangla, let us review what has been discussed in the previous literature. Other than the claim that *-gulo* and *-ra* are plural classifiers (Bhattacharya 1999, Ghosh 2010, Dayal to appear, submitted), *-ra* has been argued to be a noun marker (Dasgupta 1983, Thompson 2010), and an associative plural (Chacón 2011). Dayal (submitted) presents a detailed semantic account of the two plural morphemes, which she also treats as plural classifiers. Syntactically, *-gulo* and *-ra* in this account have the same syntax, that of other classifiers like *-Ta*, *-jon* etc. The difference between the two is captured with reference to their semantics. *-gulo* is claimed to be a classifier that turns kind-denoting bare nominals to predicates of non-atomic object-level individuals, whereas *-ra* is claimed to be an identity function on kind terms. Furthermore, *-ra* sorts the class of animate objects from inanimates without separating the atoms from the non-atoms. I differ from Dayal (submitted) in classifying *-gulo* and *-ra* as plural classifiers. I suggest that *-gulo* is the plural marker in Bangla. I side with Dayal (to appar) to propose that *-gulo* is a semantic plural. *-gulo* is merged

<sup>2</sup> Although this construction is not preferred by many native speakers, Dayal (submitted) reports *-gulo* to be acceptable when attached to surnames, as in (i).

(i) ghoS-gulo eSechilo  
 Ghosh-GULO came  
 ‘The Ghoshes came’

as the number head in this account, contra Dayal (submitted) where *-gulo* merges as a classifier. I follow Chacón (2011) in suggesting *-ra* to be an associative plural and is merged higher than the DP. Furthermore, I situate the claim with respect to other classifier languages where the (associative) plural marking has been established. In the next section, I provide an account of *-gulo* and *-ra*, in comparison with the plural markers of Korean, Chinese, and Japanese.

### 3. Two Types of Plural Markers in Bangla

In this section, I discuss the distribution of *-gulo* in connection with the Korean plural marker *tul*. Plural markers in classifier languages are not uncommon, but they show different characteristics regarding number marking than that of the non-classifier languages. However, *tul* has been mostly argued to be a (regular or non-associative) plural<sup>3</sup> marker (Song 1994, Kim 2005). Bangla *-gulo* shares several plural marking properties with Korean *tul*, as discussed in the next section.

#### 3.1. Bangla *-gulo* and Korean *tul*

Bangla *-gulo* is more restricted in its distribution than Korean *tul*. While *tul* is compatible with all common nouns, regardless of count or mass, pronouns and proper names, *-gulo* is restricted to only count nouns, and the 3<sup>rd</sup> person non-human pronoun. Furthermore, Korean *tul* co-occurs with a numeral classifier (in contrast to Chinese and Japanese associative interpretation, to be discussed later). The NP-*tul* is interpreted as an additive plural<sup>4</sup>. Bangla *-gulo* never appears with the numeral classifiers, as shown in examples (3)-(6).

- |        |  |              |                               |      |  |                           |
|--------|--|--------------|-------------------------------|------|--|---------------------------|
| (3) a. | {haksayng / sakwa / mwul}-tul<br>student / apple / water-TUL<br>'(the) students/apples/waters'                             | b.           | ku-tul<br>he-TUL<br>'they'    | c.   | meri-tul<br>Mary-TUL<br>'Marys'                    |                           |
|        |  |              |                               |      |  | [examples from Park 2008] |
| (4) a. | {chatro / apel / jOl}-gulo<br>student / apple / water-GULO<br>'the students/apples/(bottles of) water'                     | b.           | Se-gulo<br>3p-GULO<br>'those' | c. ? | mira-gulo<br>Mira-GULO<br>'individuals named Mira' |                           |
| (5)    | {haksayng-tul / ku-tul / meri-tul}<br>student-TUL / he-TUL / Mary-TUL<br>'three students'<br>'three they'<br>'three Marys' | sey<br>three | myeng<br>cla                  |      |  | [Korean]                  |
| (6)    | {*chatro-gulo / *Se-gulo / ?meri-gulo}<br>student-GULO / he-GULO / Mary-GULO   |              | tin-Te<br>three-cla           |      |  | [Bangla]                  |

While the *-gulo*-NP is interpreted as definite with noun phrases, *tul*-NPs can be interpreted as both definite and indefinite. Furthermore, the definite interpretation of the noun with *-gulo* is categorized as a strong definite (Simpson 2011, Biswas 2012). The referents of these NPs are always anaphoric, i.e., the referents must be contextually salient. Dayal (to appear) shows that NP-*gulo* refers to a maximal set, i.e., the existence of the set of students is presupposed from the discourse (Dayal to appear, submitted).

Park (2008) shows that *tul* is compatible with collective predicates with distributing sub-entailments, whereas, it is incompatible with predicates that lack the distributive sub-entailments, as shown in (7). The distributive sub-entailment for the collective predicate holds

<sup>3</sup> But see Park (2008) where *tul* has been proposed as a distributive marker.

<sup>4</sup> I have been informed that Korean has a distinct associative plural marker (Chorong Kang (p.c.)).



mass (e.g., *Onek* ‘much/many’), it triggers a mandatory plural agreement on the bound variable. Both singular and plural pronouns can be bound by the bare quantifier, as in (10a), whereas in (10b), when *-gulo* attaches to the quantifier, only a plural pronoun can be bound.

- (10) a. *Onek chele tar / tader laptop eneche*  
 many boy his / their laptop brought  
 ‘Many boys brought his/their laptop(s).’  
 b. *Onek-gulo chele \*tar / tader laptop eneche*  
 many-GULO boy \*his / their laptop brought  
 ‘Many boys brought their laptop(s).’

However, Bangla *-gulo* is different than English *-s*: *-gulo* is a semantic plural while English ‘*-s*’ is not (Biswas 2012, Dayal submitted). The plural interpretation of the ‘*-s*’ is an implicature. (11) indicates a failure of implicature because the denotation of ‘children’ also includes the denotation of ‘child’ (Link 1983, Doetjes 1997). However, this is not the case in Bangla. *-gulo* indeed implies existence of more than one individual, and excludes the reference to atomic individuals, as shown in (12), (also in Dayal *submitted*).

- (11) A: Please bring your children to the party.  
 B: #Well, I can’t come then, I have only one child!  
 (12) A: *apnar bacca-gulo-ke parTi-te niye aSben*  
 your child-GULO-acc party-loc bring-fut-3  
 ‘Please bring your children to the party.’  
 B: *tahole to ami aSte parbo na. amar to ekTa bacca*  
 Then prt I come-inf be-able-neg. I-gen prt one-Ta child  
 ‘Oh! I can’t come then, I have only one child!’

In this section, I show that Bangla *-gulo* shares several properties with the Korean plural marker *tul*, however it is more restricted than *tul*. *-gulo* is in a complementary distribution with numerals and classifiers. The NPs with *-gulo* can have both collective and distributive interpretations. Syntactically, *-gulo* induces plural agreement to match its semantic plurality, as evident from the plural agreement on the bound variable. The NP with *-gulo* is interpreted as a strong definite. The lexical entry for *-gulo* might be suggested as a function that takes a predicate of atomic individuals and returns a predicate of plural individuals. Next I discuss the properties of Bangla *-ra* in comparison with Chinese *men* and Japanese *-tachi*.

### 3.2. Bangla *-ra* with Chinese *men* and Japanese *-tachi*

Chinese *men* and Japanese *-tachi*(-tati) have been a topic of interest for their distinctive properties. They are reported to be ‘associative’ plurals which are different than the English plural *-s*. Although Li (1999) argues that *men* can be analyzed to be similar to English *-s*, with its unique features attributed to the nominal structure of Chinese, others have argued that *men* is an associative plural (Nakanishi & Tomioka 2004, 2008, Kurafuji 2004, Ueda & Haraguchi 2008 a.o.). A previous account (Chacón 2011) shows that Bangla *-ra* shares several properties with Chinese *men* and Japanese *-tachi*. The similarities and differences of these morphemes are shown<sup>5</sup> in Table 1. Here I discuss three properties which are pivotal in situating *-ra* in the syntax and in comparison to Chinese and Japanese. The three properties are: (i) inverted NP

<sup>5</sup> This table is similar to that of Chacón (2011:74), and it also incorporates data from Li 1999, Ishii 2000, Nakanishi & Tomioka 2004, Hosoi 2005, Kurafuji 2005, Nakanishi & Ritter 2008, Ueda & Haraguchi 2008, Ochi 2012.

with Numeral classifier, (ii) restriction on (in)definiteness, and (iii) licensing arguments to generic or kind predicates.

(13) Similarities in the distribution and interpretation of *-ra*, *men* and *-tachi*

Properties	Chinese <i>men</i>	Japanese <i>-tachi</i>	Bangla <i>-ra</i>
Compatibility with -			
Human count nouns	Yes	Yes	Yes
Inanimate nouns	No	Yes	No
Non-human nouns	No	No	optional in generic
Proper nouns and Pronouns	Yes	Yes	Yes
Interpretations -			
Associative interpretation	Proper names and pronouns	Proper names and pronouns	Proper names and pronouns
Additive interpretation	Count nouns	Count nouns	Count nouns
(In)definiteness	Definite	(In)definite	Indefinite
Co-occurrence with Num-classifier	Yes (*CN)	Yes	Yes
NPs fronted when co-occurs with Num-Cla	Yes	(Yes)	Yes
Can be predicated of -			
Predicative NP	No	Yes	Yes
Existential predicates	No	Yes	Yes
Generic and Kind predicates	No	Optional	Mandatory for human kind terms Optional for non-human kind terms
Takes wide scope relative to negation	No	Yes	Yes
Intensional predicates	No	Yes	Yes
Subject-object asymmetry	No	No	Yes

Table 1: Similarities in the distribution and interpretation of *-ra*, *men* and *-tachi*

NP-‘object’-shift (*cf.* Bhattacharya 1999) or the NP-fronting in Bangla has been associated with specificity (due to Bhattacharya 1999 *et seq*) and definiteness (Dasgupta 1983, Ghosh 2010, Chacón 2010, Dayal to appear, submitted a.o.). The NP moves across the numeral classifier to the specifier of DP for obtaining definiteness. This inversion in the word order results in strong definite structures even when there is no numeral classifier. Such a movement results in the strong definite interpretation (Simpson 2011, Biswas 2012), as shown below:

- (14) a. [lal phul] du-To [~~lal~~phul]  
 red flower two-cla  
 ‘The two red flowers’  
 b. chele-gulo ~~e~~chele  
 boy-gulo  
 ‘The boys’

We see similar inversion in case of *-ra* with common nouns, pronouns and proper nouns. When *-ra* appears with numeral classifiers, the NP appears in an inverted order. However, the

NP-inversion does not result in a strong definite interpretation, as shown in (15a), rather it renders an indefinite interpretation with the bare nouns, while with a numeral classifier, it is interpreted as a weak definite. NP-inversion is not syntactically visible in Japanese, as in (16), because it allows floating numeral quantifiers. Chinese associative plurals allow only pronouns and proper nouns with numeral classifiers, as in (17).

- (15) a. chatro-ra (tinjon) ~~chatro~~ [Bangla]  
 student-RA three-cla  
 ‘(three) students’  
 b. rito-ra<sub>i</sub> tinjon ~~ritō~~  
 Rito-RA three-cla  
 ‘Rito and others, totaling three’  
 c. am-ra<sub>i</sub> tinjon ~~am-ra~~  
 I-RA three-cla  
 ‘we three’
- (16) ({gakusei / Taro / watasi} -tachi) san-nin ({gakusei/ Taro/ Watasi}-tachi) [Japanese]  
 student / Taro / we - TACHI three-cla  
 ‘three students’  
 ‘Taro & others, totaling three’  
 ‘we three’
- (17) {li / wo}-men san-ge {li / wə}-men [Chinese]  
 Li/I-MEN three-cla  
 ‘Li & others, totaling three’  
 ‘we three’ (Japanese and Chinese exs from Ueda & Haraguchi 2008)

The -ra-marked nominal also co-occurs with quantifiers in the inverted position. The strong quantifiers, e.g., *prottek* ‘each’ and *SOB* ‘all’ co-occur with the inverted ra-marked nominal, as in (18). An agentive suffix -e appears with this quantifier which also appears with a ‘standalone’ quantifier, as in (19). Structurally, this suggests if the standalone quantifiers are DPs, and if there is NP movement to -ra across the quantifier, then -ra must be situated above the DP.

- (18) a. chatro-ra prottek-e b. chatro-ra SOB-ai  
 student-RA each-agt student-RA all-agt  
 ‘Each of the students’ ‘All of the students’
- (19) a. SOB-\*(ai) cole gEche b. prottek-\*(e) cole gEche  
 all leave gone each-agt leave gone  
 ‘All left.’ ‘Each (of them) left.’

NP-inversion is not only unique to Bangla, as we saw, all the three languages involve an inverted word order of the nominal and the numeral-classifier when an associative plural is present. However, they differ in their interpretations. While bare Chinese common nouns in associative plurals are obligatorily interpreted as definite, Japanese bare common nouns can be both definite and indefinite (Nakanishi & Tomioka 2004). Whereas, the same in Bangla are interpreted indefinite. Associative plurals in these three languages also differ with respect to their availability as arguments to generic predicates. Japanese and Chinese do not allow associative plurals to be predicated of generic/kind sentences<sup>6</sup> (Nakanishi & Tomioka 2004, Ueda & Haraguchi 2008 a.o.), whereas Bangla human count nouns obligatorily require -ra for

<sup>6</sup> However, I have been informed that Chinese *men* and Japanese *-tachi* can appear as arguments of generic predicates with a relative scale of judgment.



generic or kind predicates. (20a) illustrates when ‘Italian’ is the subject, the intended generic or kind interpretation is only available in Bangla with the noun in *-ra*, while both Chinese and Japanese render ungrammatical sentences in similar constructions. However, it is possible to have a reading where the verb is being predicated of sub-kinds in Japanese. For example, *itariajin-tachi* ‘Italian-tachi’ can be interpreted as a subgroup of Italians, for example, as Nakanishi *et al.* (Nakanishi & Tomioka 2004) demonstrates, a group of Italians visiting Japan.

- (20) a. italiyo-\*(ra) {haSikhuSi / Dinar-e pizza khay} [Bangla]  
 Italian-\*(RA) cheerful at-dinner pizza eat
- b. yidali (\*men) (ren) {kuaile/ wancan chi pisa} [Chinese]  
 Italian (\*MEN) people cheerful dinner eat pizza
- c. itariajin-(\*-tachi)-wa {youki desu/ yūshoku-de piza-o taberu} [Japanese]  
 Italian-(\*TACHI)-top cheerful be dinner pizza eat  
 ‘Italians are cheerful.’  
 ‘Italians eat pizza in dinner.’

In this section I establish that Bangla *-ra* indeed shares several properties with Chinese *men* and Japanese *-tachi*. Previous literature (Ghosh 2010, (also Bhattacharya undated, mentioned in Dayal submitted), Dayal submitted) suggest Bangla *-gulo* to be similar to *men* and *-tachi*, however, as I showed in section 3.1, Bangla *-gulo* is similar to Korean *tul*. Instead, it is *-ra* that displays similar properties of the associative plurals and is similar to *men* and *-tachi*. However, *-ra* is also different from the *men* and *-tachi*. Specifically, the distribution of *-ra* in comparison to other associative plurals reveals that the associative plurals do not need to be definite (unlike Chinese (Li 1999)) and associative plurals can be arguments of generic/kind predicates (unlike Japanese, (Nakanishi & Tomioka 2004)). We also see that the associative plurals require the NP to move from its base position to a position which results in an inverted NP word order. While this type of NP-shift has been attributed to definiteness elsewhere in Bangla, we also see that the movement in *-ra* does not induce a definite interpretation on the noun to which it is attached to.

Let me summarize the facts that we obtained so far. Recapitulating, we see that the alleged plural classifier *-gulo* indeed induces plural interpretation on the nouns phrases that it appears with. However, unlike classifiers, it doesn’t co-occur with numerals, but does co-occur with other quantifiers. *-gulo* has been argued to be a plural number marker. The other morpheme *-ra* which has been previously categorized as a ‘noun marker’ (Dasgupta 1983) or a classifier (Dayal to appear, submitted), is situated as an associative plural (following Chacón 2011). I show that the associative plural in Bangla has the least restricted of all, while Chinese is the most restricted. Thus, *-gulo* and *-ra* are characteristically distinct from each other. Now, the question arises, how exactly these two are different, in terms of their syntactic structure and semantic interpretation and what unifies them in achieving the plural interpretation in Bangla? I discuss this in the next section.

## 4. Analysis

### 4.1. Syntactic Assumptions

I start with a background assumption that the substantive lexicon consists of roots, unmarked for any category. Once embedded under a functional structure, the specification of the functional head maps the characteristic traits into the syntax (*cf.* Borer 2005). Thus, the count-mass distinction is obtained in the syntax. Specifically, an unmarked  $n^0$  categorizes the roots as nominal and the noun is interpreted as a predicate of mass-like objects. A classifier (overt or null) individuates, i.e., contributes count interpretation. Assuming that bare nouns in

classifier languages denote in the property domain, the classifier functions from a property-denoting predicate to a predicate of individuals. Primarily, the function of the classifier is individuation of the denotation of nouns. I adopt the standard view for the structure of nominals in classifier languages (Li 1999, Simpson 2005), as given in (21).

$$(21) \quad [_{DP} D^0 [_{NumP} Num^0 [_{ClP} Cl/Cl_{\emptyset} [_{nP} n^0 [_{NP} \checkmark ]]]]]$$

Before going into the details of each morphological marker, here I state the specific claims of this account. In the previous sections, I demonstrated that *-gulo* and *-ra* are different in their syntactic distributions and semantic interpretations. Here I argue that the alleged plural classifier *-gulo* is a plural number marker, specified for [+plural] and merged in the NumP. Whereas, *-ra* is a functional head located above DP, responsible for the associative interpretation.

#### 4.2. *-gulo* as a Plural Number

My take on *-gulo* is that the semantic distinction of number depends on the presence of this grammatical formative, a pluralizer *-gulo*. It takes a predicate of singular individuals and returns a predicate of pluralities. Thus, *-gulo* can be formally defined as a function such that given a predicate P of atomic individuals, it returns a predicate Q of plural individuals. It also implies the presence of a null classifier which individuates the denotation of the nouns. My proposal for the function of *-gulo* is similar to that of Dayal's (Dayal submitted), except for the basic assumptions. Dayal assumes, following the Neo-Carlsonian insights, bare nouns in Bangla denotes kind terms. She suggests *-gulo* to be a classifier that functions from a kind predicate to a predicate of non-atomic individuals. Whereas, in this account, a null classifier individuates the denotation of the nouns and then *-gulo* merges in the Num<sup>0</sup>. It predicts the incompatibility of the cardinals with *-gulo*. Paucal numerals in Bangla are merged with the Num head while the higher numerals are in the spec, NumP (Syed Saurov (p.c.)). Paucal numerals are incompatible with *-gulo* since both of them merge into the Num<sup>0</sup>. Since cardinals in Bangla always<sup>7</sup> appear with an overt classifier, higher numerals are also precluded from *-gulo*-NP. Dayal argues that the semantics of *-gulo* prevents it from combining with numerals. *-gulo* is a classifier and it co-occurs with the quantifiers. (22a) shows that *-gulo* does not induce inversion with the universal quantifier *SOB* 'all', while (22b) shows NP-shift, and as expected, it has a definite interpretation.

- |         |                   |    |                   |
|---------|-------------------|----|-------------------|
| (22) a. | SOB-gulo boi      | b. | SOB boi-gulo      |
|         | all-GULO book     |    | all book-GULO     |
|         | ‘All (the) books’ |    | ‘All (the) books’ |

In the case of (22a), as Dayal notes, the universal quantification is over pluralities, while in (22b), the universal quantification is over the plural individual (Dayal submitted: 20). This pair draws a similarity between the indefinite and definite interpretations of the numeral NP construction, where the raised NP is interpreted to be definite. And hence it serves as a support that *-gulo* is a classifier. Alternatively, I attribute this distinction to be a consequence of the floating characteristic of the universal quantifier. Thus, in (22a), it might be the case that the universal quantifier is merged in the NumP, while in (22b) it merges above the DP, and takes a DP complement. A similar observation should be noted here. Recall that a variable bound by *-gulo* shows plural agreement. With the quantifiers that are unspecified for

<sup>7</sup> But see Dasgupta 1983, Chacón 2010 for exceptions. For example, the cardinal in *car paS* 'four sides' can appear without the classifier, however, these constructions are dependent on the choice of the noun.

count or mass, for example, *Onek* ‘much/many’, *-gulo* induces plural agreement with a bound variable, as discussed in (10), repeated as (23).

- (23) *Onek-gulo chele \*tar/tader laptop eneche*  
 many-GULO boy \*his/their laptop brought  
 ‘Many boys brought their laptop(s).’

Syntactically, the non-numeral quantifiers are situated in the Spec of NumP. When this quantifier merges in the Spec, NumP with the head filled by *-gulo*, it quantifies over a group of plural individuals, in contrast to *Onek chele* ‘many boys’, where it quantifies over the individuated noun. Although this observation does not prefer *-gulo* to be a plural marker over a classifier, it strengthens the claim *-gulo* is indeed a semantic plural.

In this section, I suggested *-gulo* as a plural marker. I side with Dayal’s proposal that *-gulo* is a semantic plural and definiteness is not an inherent property of it (Dayal submitted). I strengthen the proposal with supporting examples. I differ from Dayal in basic assumptions and in defining *-gulo* as a classifier. I propose that a null classifier individuates the denotation of the noun in presence of *-gulo* as a number marker. *-gulo* further takes the individuated predicate and return a predicate of plural individuals. In the next section, I discuss the case of the *-ra* and situate it as an associative plural.

#### 4.3. *-ra* as an Associative Marker

Bangla *-ra* (so is *men* in Chinese) is restricted only to the animate nouns (Dasgupta 1983, Ghosh 2010, Dayal to appear). Typologically, associative plurals are considered different than number marking (Corbett 2000). They are categorized as special markers for animate (or human) nouns (Moravčšik *et al.* 2013). In section 3.2, I demonstrated that *-ra* have several properties similar to Chinese *men* and Japanese *-tachi*. Here I propose, following Chacón (2011), that *-ra* is an associative plural marker and associative plurals (*-ra*, *men*, *-tachi*) are merged higher than the DP. Elsewhere, associative plurals have been suggested to be merged in a group phrase GrP (Nakanishi & Ritter 2008) which is projected outside the DP. Three related observations in this account - (in)definiteness of the common noun in the associative plural, obligatory NP inversion and (in)ability of being arguments of generic kind predicates, are pivotal in this proposal. The syntactic structure of the associative plurals is given below:

- (24)  $[-raP -ra [DP D^0 [NumP Num^0 [CIP Cl/Cl_{\emptyset} [n_P n^0 [NP \checkmark ]]]]]]$

An associative plural is defined as a grammatical formative that takes a predicate of individuals (regardless of atomicity) and returns a group that consists of an individual of whom the predicate is true as the focal referent and its associates (*cf.* Nakanishi and Tomioka 2004). Following the standard assumption of the neo-Carlsonian framework where bare nouns are suggested to be kind terms, Dayal (submitted) states that *-ra* separates animate nouns from inanimate nouns and it includes atomic individuals in the denotation of the NP. *-ra* is an identity function on animate kind terms. The function from kind to kind rules out the definite reading of the *-ra*-marked nominals and allows the *-ra*-marked noun phrases to be arguments to generic or kind predicates. Although I agree with the first two generalizations that Dayal makes, the third one is not sufficient to explain the cross-linguistic availability of associative plural marked nominals as arguments of generic predicates and their (in)definiteness. Specifically, if Chinese *men* and Japanese *-tachi* share properties with Bangla *-ra*, i.e., they denote identity functions from kind to kind, then the different behavior of *-ra*, *men* and *-tachi* is not expected. Next I discuss two properties of *-ra* that suggest that *-ra* is not a classifier, rather it is a separate functional projection for associative plural.

Like Bangla *-gulo*, *-ra* is also associated with a NP movement. However, the interpretation of the shifted-NP is not the same as in the case of *-gulo*-marked NPs. As mentioned in the earlier sections, a strong definite reading arises in case of NP fronting with *-gulo*, however, in case of *-ra* two types of interpretation surfaces: (i) the bare common noun with *-ra* has an indefinite interpretations, (ii) the inverted *-ra*-marked noun with a cardinal is interpreted as a weak definite. I leave the details of these two readings for future work in want of space. However, I take this to posit the *-ra* as a functional projection above the DP. Note that only the human classifier *-jon* is allowed in this inverted construction. If *-ra* is a classifier, what explains the availability of the human classifier, when classifier stacking is generally prohibited in this language? I take this as a suggesting cue that *-ra* appears in a separate functional projection than the CIP. Furthermore, as discussed in (18) (repeated in (25) below), the agentive marked universal quantifier appears when the *-ra*-marked NP is in the inverted order. Universal quantifiers take a DP complement (for example in Hebrew, the floating universal quantifier takes a DP complement, and induces agreement when the NP moves out of its domain. *cf.* Shlonsky 1991). Similar pattern has also been noticed in Romance languages. The agentive marker on the floating quantifier suggest that the NP moves out of the DP and merges to the Spec of QP to induce the agreement.

(25) chele-ra prottek-e  
 boy-RA each-agt  
 ‘each boy’

Obtaining both indefinite interpretation of the bare count noun with *-ra*, and the weak definite interpretation of the same in presence of a numeral-classifier involve NP-shift, much as for the definite interpretation of the nominals with *-gulo*. The Spec, DP has been suggested as the landing site of the NP (Simpson 2011, Chacón 2011, Biswas 2012, Dayal to appear, submitted). It can be suggested that when the  $D^0$  is specified with a [-Def] feature, there is no movement to the Spec, DP. The indefinite interpretation is result of existential closure. The DP then moves to the Spec of *-raP*, which is situated above DP, for phonological reasons (e.g., clitic-like properties of *-ra*, as suggested in Ghosh 2010, Dayal submitted). In the presence of a numeral-classifier, the *-ra*-marked nominal receives a weak definite interpretation. The NP moves across the num head to the Spec of DP. Then, the DP moves to the Spec of *-raP*. The pronouns and proper nouns are realized in  $D^0$  (Longobardi 1994, Li 1999), therefore, they move further to combine with *-ra*.

In this section, I argue that the associative plurals are not classifiers, rather they project a different functional projection above the DP. Much like *-gulo*, a classifier, an overt human one or a null, individuates the denotation of the noun. The indefinite or the weak definite interpretations are achieved via movement of the NP, as standardized in Bangla. Then the DP moves to the Spec, *-raP* for the associative interpretation. I show that this structure of the associative plural explains the classifier stacking and the indefinite or weak definite interpretations of the noun phrases. I side with Nakanishi and Tomioka (2004) for the semantics of the associative plurals and show that this structure does not counteract the proposal.

## 5. (In)definiteness and (In)compatibility with Generic Predicates

In this section I explain the crosslinguistic puzzle related to the associative plurals: Bangla displays the least restricted distribution while Chinese is the most restricted one. The obligatory definiteness of the Chinese associative plural *men* is resultant of obligatory realization of *men* in  $D^0$  (Li 1999). Japanese and Bangla associative plurals are not obligatorily definite. I argue, following Li (1999) for Chinese, that *men* in Chinese is the

means of definiteness whereas, the *-ra* and *-tachi* are not associated with definiteness. This relates to their availability to be arguments to generic predicates. The (in)compatibility of these common noun phrases with the generic predicates depends on whether there is an overt means of specifying the generic operator in these languages, much as expressing definiteness via *men*. It can be suggested that Bangla *-ra* is associated with generic predicates and thus, it is obligatory in the generic predicates, while *-tachi* is associated with neither. This follows the *principles of Blocking* (Chierchia 1998) which states that generally a covert application of applying a function (either definiteness via iota-operation or genericity via down-operator) is blocked if a language has overt means of expressing the same. Since Chinese *men* is the means of expressing definiteness, it can only be interpreted as definite, whereas, *-ra* is associated with genericity, therefore, *-ra* is mandatory in generic predicates. Japanese *-tachi* does not associate with either of these processes and hence it has a flexible distribution.

Outstanding questions, which I leave for future work, include the devising a uniform semantics for *-ra*, *men* and *-tachi*. *-ra* is restricted only to the subject position, a genitive case marking appears when *-ra* appears in the object position. Associative plurals in many Slavic languages are isomorphic to possessive structure (Vassilieva 2005), a possible future direction includes exploring the connection between the associative plurals and the possessive constructions.

## 6. Conclusions

Bangla is the language that proves Chierchia's conjecture wrong: classifier languages do have singular-plural distinction and that is realized in syntax. We see that Bangla *-gulo* is a (semantic) plural marker and it is in complementary distribution with the numeral classifiers. Much like other classifier languages, Bangla *-ra* is an associative plural marker which is categorically different than *-gulo*. A crosslinguistic comparison with Korean, Chinese and Japanese situates Bangla to be a language which displays two types of plural marking.

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