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## Revisiting Relative Clauses in Japanese, with Reference to Bangla

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### Abstract

The objective of this study is to clarify the language-specific characteristics of relative clauses in Japanese through a comparative analysis of relative constructions in Japanese and Bangla along four parameters: i) degree of nominalization in the relative clause, ii) linking of the relative clause with the matrix clause, iii) referential coherence, and iv) application of the noun phrase accessibility hierarchy in the relative clause. I analyze the language-specific characteristics of Japanese relative clauses to cast light on the controversy as to which kinds of complex noun phrases actually have relative clause status, on the basis of the conditions for desentential nominalization and also specific morphosyntactic criteria. With this analysis, I argue that the constituent formed from a finite clause by a two-phase process of desentential nominalization involving one of the arguments of the corresponding finite clause satisfies the morphosyntactic conditions to be a relative clause. The noun phrase satisfying these conditions receives a relative clause interpretation as its head shares a referent with the element in the gap whose presence is indicated by the predicate of the relative clause.\*

**Key words:** relative clause, noun phrase, nominalization, referential coherence, NPAH

### 1. Introduction

Relative clauses (RCs) are a kind of verbal clause which form what I call an RC construction (e.g. complex NPs in Japanese) with one of the elements of the matrix clause (MC) on which it depends. Japanese (isolate) and Bangla (Indic) employ distinctive means for the realisation of RCs. It has recently been an issue of controversy (Whitman 2013) as to whether RCs in Japanese are to be distinguished within a larger set of noun-modifying clauses (NMCs). This controversy stems from the extension of the term ‘relative clause’ beyond complex NPs involving the *uchi no kankei* (inner relationship) strategy defined by Teramura (1969). *Uchi no kankei* refers to the syntactic relationship that holds between a gap in the RC and its head. The controversy is related to the application of the gap strategy in the formation and interpretation of RCs in Japanese. The shared referent between the head noun of the NP and the referent noun is interpreted as occupying the position of the gap. The referent nouns with their case property in the gap share a referent with the head noun of NP. However, the required case cannot always be recovered with the semantic-pragmatic cues which yield a case-recoverability problem.

Given the above background on RCs in Japanese, this study aims to contribute to the debate over the relationship between RCs and NMCs by undertaking a comparative analysis between RCs in Japanese and Bangla along the following four parameters: i) degree of nominalization in the RC, ii) process of linking of the RC with the MC, iii) the nature of referential coherence, and

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iv) application of the noun phrase accessibility hierarchy (NPAH) in the RC.

## 2. Types of relative clause in Japanese and Bangla

The typology of RCs varies with respect to the strategies involved in the formation of the RC as well as with respect to the intra-relation of the RC with its head, and the inter-relation between the RC and the MC. According to recent typological approaches, RCs can be classified into the following three types: i) adnominal RCs, subdivided into prenominal and post-nominal, circumnominal, or internally headed RCs, ii) clause-adjoined RCs, which include correlatives, subdivided into preposed and postposed types, and iii) adsentential RCs (Dasgupta 2003).

While Japanese has only adnominal RCs, Bangla has all three types, as described in sections 2.1 and 2.2 below.

### 2.1 Relative clauses in Japanese

In Japanese traditional linguistics, RCs are included in the category of *rentaishūshoku-setsu* (連体修飾節). This term includes constructions whose counterparts are not analyzed as RCs in other languages, such as English, giving rise to the kind of controversy mentioned at the outset of this paper. In large part, the term *rentaishūshoku-setsu* corresponds to the concept of ‘complex NP’ in generative grammar. However, it is not always clear that the clausal component of Japanese RCs is fully clausal. For example, the RC-modified NP *saitairu hana* in (1) might be construed either as ‘blooming flower’ or ‘flower which is blooming’. Together with its head *hana* (flower), it forms a noun phrase (NP).

- (1) *niwa de saiteiru hana*  
 garden LOC bloom.PRES.PROG flower  
 ‘blooming flower in the garden’ or ‘flower which is blooming in the garden’

In an RC, the semantic domain of relativization is established by the modified noun *hana* (flower), whereas the RC [*niwa de saiteiru*] ‘it is blooming in the garden’ restricts this domain by specifying which *hana* (flower) is referred to, as in the following MC containing the RC.

- (2) [*niwa de saiteiru*] *hana ga kirei desu.*  
 [garden LOC bloom.PRES.PROG] flower TOP beautiful COP  
 ‘The flower which is blooming in the garden is beautiful.’  
 ‘The blooming flower is beautiful.’

Under certain conditions (see e.g. Harada 1977) the subject of Japanese RCs may be realized with genitive case.

- (3) *kore wa ano-hito no kaita hon.*  
 this TOP DET-man GEN write-PAST book  
 ‘This is a written book by/of that man.’

### 2.2 Relative clauses in Bangla

Bangla exhibits all three of the RC types listed above: adnominal RCs, which include participial RCs, adjoined RCs, and correlative RCs. Previous researchers (e.g. Morshed 1986) have been mainly concerned with the archetypal correlative RC, a kind of adjoined RC, and have focused

less on adsentential RC and participial RC.

### 2.2.1 Adnominal relative clauses

Bangla prenominal RCs are all of the participial type. The participle may inflect for either simple past (4) or progressive aspect (5) (cf. Faquire 2008, 2010). They may modify either a light noun, for example, *bishoy* ‘thing’ or a lexical noun, for example, *boi* ‘book’.

- (4) *tar poRa boi*  
 he.POSS read.PAST.PART book  
 ‘the book he read’ (lit. ‘his read book’)
- (5) *jule thaka badur*  
 suspend.PAST.PROG bat  
 ‘the bat which is suspended’ (lit. ‘hanging bat’)

The participial clause in an NP is distinctive from the post-modifying RC (6), about which I present evidence in section 2.2.2:

- (6) *je boi she poReche*  
 which book s/he read.PERF  
 ‘the book which s/he has read’

### 2.2.2 Adjoined relative clauses (correlatives)

In Bangla, adjoined or correlative RCs show six different patterns given the possible combinations of the relativized noun, the demonstrative pronoun (which sometimes functions as personal pronoun) that resumes the correlative in the MC, and the modifying RC. The distinction of the patterns turns on the occurrence of the head noun, the relative pronoun and correlative pronoun (i.e. coreferential markers), and the placement of the relative and matrix sentences in a complex structure. The construction allows both preposed and postposed RCs with three different patterns each as follows.

#### 2.2.2.1 Preposed adjoined relative clauses (correlative)

- (7a) *je chele-Ta kobita lekhe, she eshecilo.*  
 who boy-DET poem write.PRES.HAB s/he come.PAST  
 ‘The boy who writes poems came.’ (lit. ‘Who the boy writes poems he came.’)
- (7b) *je kobita lekhe, she eshecilo.*  
 who poem write.PRES.HAB s/he come.PAST  
 ‘The person who writes poems came.’ (lit. ‘Who writes poems came.’)
- (7c) *je kobita lekhe, she chele-Ta eshecilo.*  
 who poem write.PRES.HAB s/he boy-DET come.PAST  
 ‘The boy who writes poems came.’ (lit. ‘Who writes poems, that boy came.’)

#### 2.2.2.2 Postposed adjoined relative clauses (correlative)

- (7d) *she eshecilo, je chele-Ta kobita lekhe.*  
 s/he come.PAST who boy-DET poem write.PRES.HAB  
 ‘He came, the boy who writes poems.’ (lit. ‘He came, who the boy writes poems.’)

- (7e) *chele-Ta, je kobita lekhe, she eshecilo.*<sup>1</sup>  
 boy-DET who poem write.PRES.HAB s/he come.PAST  
 ‘The boy who writes poems came.’

The examples in (7) show the basic properties of correlatives or adjoined RCs. The argument position in the MC is occupied by the correlative pronoun *she* (equivalent to either *s/he* or demonstrative *that*). The RC consists of a relative pronoun (REL-PRO), here *je* ‘who’ followed by the clause, which contains the semantic head, here *chele-Ta* ‘boy-DET’.

### 2.2.3 Adsentential relative clause

Adsentential RCs, for example, *ja ammu dekhe* do not modify an NP; rather they refer back to a part of a sentence (8), for example, *ami shatar kaTi, ja ammu dekhe* ‘I swim, which my mother watches’. The construction is thus distinct from adjoined or correlative RCs. The most common relative pronoun introducing the RC in this pattern is *ja* ‘which’, a determiner REL-PRO. As we see in (8), unlike adjoined RCs, *ja* does not correlate with any correlative pronoun in the MC.

- (8) *ami shatar kaTi ja ammu dekhe.*<sup>2</sup>  
 I swim.PRES.HAB REL-PRO mother see.PRES.HAB  
 ‘I swim, which my mother watches.’

## 3. Relative clauses with regard to noun phrase properties

The types of RCs which we surveyed in section 2 are defined in terms of the properties of their head. In fact, there are studies which define RCs by focusing on their heads. Lehmann (1986: 664) presents a definition of RC of this sort. He defines a relative construction as *a nominal (or a common noun phrase) and a subordinate clause interpreted as attributively modifying the nominal. The nominal is called the head and the subordinate clause the RC.* The following is the analysis of RCs with regard to the properties of their heads in Japanese in comparison with Bangla.

### 3.1 Linear order and constituency in the noun phrase

The relative order of modifiers in NP is a major typological parameter. Modifiers may occupy the position either before or after the head noun; by convention, these are known respectively as pre-nominal modifiers and post-nominal modifiers. All modifiers of NP in Japanese are pre-nominal. In Bangla, modifiers of NP mostly occupy the pre-modifying position, except the post-nominal items such the definite/plural suffixes, as described in section 3.1.2.

Modifiers in Bangla and Japanese, in contrast to these in English, do not show a rigid order in the array of modifying elements; their position vis-à-vis one another is relatively flexible (cf. Whitman 1981). The demonstrative, for example, *she* ‘that’ in Bangla and *sono* ‘that’ in Japanese, however, tends to maintain initial position in relation to clausal and phrasal modifiers, and adjectival modifiers never precede clausal/phrasal modifiers (that is, RCs) in either Japanese or Bangla.

<sup>1</sup> The RC (7e) presented by Morshed (1986) is not acceptable to all native speakers. Most likely, it is a loan translation of the corresponding pattern in English RCs.

<sup>2</sup> The pattern of RCs in (8) presented by Morshed (1986) is not acceptable to all native speakers. Most likely it is a loan translation of a type of English RC.

### 3.1.1 The order of modifying elements in Japanese

As pointed out above, Japanese shows relatively flexible order in the array of modifiers as follows.

(9)	DEM	(ADJ)	QUAN	PHRASE (GEN/POSS)	CLAUSE
	<i>sono</i>	<i>akai</i>	<i>ippon no</i>	<i>Nagoya-gaeri no</i>	<i>Tokyo ni iku</i>
	That	red	one	returned-from Nagoya	Tokyo going
	NOUN (GEN/POSS)		NOUN		
	<i>Tokaido-sen no</i>		<i>Shinkansen</i>		
	of Tokaido line		Shinkansen		

‘that one red Shinkansen of Tokaido line returning from Nagoya, which is going to Tokyo’

### 3.1.2 The order of modifying elements in Bangla

Bangla also shows relatively flexible order in the array of modifiers with the exception of morphological bound affixes such the definite plural suffix as in (10), which occupies the post-nominal position (cf. Gangopadhyay 1990).

(10)	DEM	QUAN	/DEM/	(ADJ)	CLAUSE	NOUN-GEN/POSS
	<i>she</i>	<i>ek</i>	<i>/ti/</i>	<i>nil</i>	<i>Kolkata theke asha</i>	<i>Bharat-er</i>
	DEM	one	DEF	blue	came from Kolkata	India-of
	NOUN /DEF//PL/					
	<i>tran</i>	<i>/-/</i>	<i>/-/</i>			
	train					

‘that one blue train of India which came from Kolkata’

Modifiers in parentheses ( ) indicate that iteration is possible. Elements in slash brackets // indicate that the modifiers are mutually exclusive.

## 3.2 Extent of modifying elements in a noun phrase

Modifiers of NP vary with respect to the size of their morphosyntactic structure. They may be of four types: morphological, lexical, phrasal, and clausal. Morphological modifiers tend to be smaller, while clausal modifiers tend to be larger in size (cf. Givon 2001: 1–3). The participating modifiers in the formation of complex NPs in Japanese in comparison with Bangla are shown in sections 3.2.1 and 3.2.2.

### 3.2.1 Types of modifying elements in Japanese

Japanese allows all types of modifier except the morphological type in complex NPs, as shown in the following.

- i) Lexical type:     Demonstrative, e.g. *kono* ‘this’  
                       Noun, e.g. *Tokaido* ‘proper name’  
                       Adjective, e.g. *kireina* ‘beautiful’  
                       Quantifier, e.g. *nandai mo* ‘a number of times’
- ii) Phrasal type:    Possessive phrase, e.g. *Tokyo-iki no* ‘Tokyo bound’ (lit. ‘Tokyo going’)
- iii) Clausal type:   RC, e.g. *Tokyo e iku (Shinkansen)* ‘Shinkansen going to Tokyo’

### 3.2.2 Types of modifying elements in Bangla

Bangla allows all types of modifiers, as shown in the following.

- i) Morphological type: Determiner, e.g. *boi-Ta* ‘book-DET’ and numeral suffix, *boi-gulo* ‘book-PL’
- ii) Lexical type: Demonstrative, e.g. *she* ‘this’  
Noun, e.g. *Antonogor* ‘proper name’  
Adjective, e.g. *shundor* ‘beautiful’  
Quantifier, e.g. *kichu* ‘some’  
Numerals, e.g. *dui* ‘two’
- iii) Phrasal type: Possessive phrase, e.g. *boi kenar* ‘for buying book’
- iv) Clausal type: Participial clause, e.g. *Tokyo jaoa Shinkansen*  
(Shinkansen that went to Tokyo)

### 3.3 Clausal modifiers in the noun phrase as relative clauses

Clausal modifiers of NP restrict the meaning of the head noun as an adjectival modifier does. Clausal modifiers in Japanese (section 3.2.1. iii) and Bangla (section 3.2.2. iv) respectively form an NP, for example, *Tokyo e itta Shinkansen* and *Tokyo jaoa Shinkansen*, both of which meaning ‘the Shinkansen that went to Tokyo’ in combination with the head Noun *Shinkansen*. As we have seen, both of these are prenominal RCs. I will explore the issue of the status of the modifying clause in greater detail in section 5.

## 4. Constituents of the relative clause in Japanese in comparison with Bangla

RCs use diverse means which vary along the following parameters: i) application of nominalization in the RC, ii) linking of the RC with the MC, iii) referential coherence between the shared referent of the RC and the MC, and iv) implication of the NPAH, all of which are major typological parameters. In this section, I will compare RCs in Japanese to those in Bangla along these parameters.

### 4.1 Degree of nominalization (desententialization) in the relative clause

Many linguists claim that the clausal constituents of RCs are nominalized clauses, derived by a process called clausal nominalization. Such nominalization, in Japanese, would be distinct from the nominalization, perhaps better called nominalization by apposition, involving nominalizers such as *no/koto*. In this section, I will present the types of evidence that have been proposed in support of the view that the modifying clause in RCs is nominalized, using morphosyntactic evidence. I will therefore support the view that ‘*what have been identified as relative clauses/sentences are in fact nominalized entities, lacking some crucial properties of both a full clause and a sentence*’ (Shibatani 2009: 163). The main evidence for clausal nominalization is the process termed desententialization. Nominalization of a finite clause may derive either an action nominal constituent (ANC), for example, *Shinkansen no Tokyo iki* ‘the going of Shinkansen to Tokyo’ or a clause removed of some of its sentential properties, *Shinkansen ga Tokyo ni iku* ‘the Shinkansen goes to Tokyo’. Such desentential (or declausal) nominalization produces constituents varying in the degree of nominalization according to Lehmann’s (1988: 200) scale of desententialization. The verbal/adjectival sentences achieve nominalization by reducing some properties of finiteness

along Lehmann's scale of nominalization as follows.

Constraints on/loss of illocutionary elements > constraints on/loss of mood/modal elements  
> constraints on/loss of tense and aspect > dispensability of complement > loss of personal  
conjugation/conversion of subject into oblique > no polarity > conversion of verbal into  
nominal government > dispensability of subject/constraints on complements (Here, > repre-  
sents *prior to* relation)

The scale of nominalization in the above is a continuum of properties, with a finite clause at the extreme left end and an ANC involving a derived nominalization as its head at the right end. Therefore, constituents towards the left end tend to show finiteness with all the required properties of an independent clause, while those towards the right end tend to show the loss of all properties of an independent clause. Thus, in this approach, the degree of nominalization is related to the number of clausal properties lost. Maximum loss of clausal properties leads to an ANC. Hence, clausal nominalizations yield roughly two different types of constituents: those which are NPs with the derivative noun as their heads and those which are clause-like constituents but cannot stand as independent clauses (Koptjevskaja-Tamm 1993). The latter type serves as dependent clauses, one type of which is the RC, which is the topic of this study. Under this approach, all clauses which display some loss of matrix properties involve some degree of nominalization. Although this approach has some degree of acceptance among typologists, it is not accepted by generative grammarians, formal semanticists, or traditional Japanese linguistics. A full discussion of the attendant controversy would exceed the scope of this paper.

Following the desententialization=nominalization approach, let us contrast the properties of RCs in Bangla and Japanese.

i) Participial RC (Bangla): A finite clause achieves the property of participial RC (Bangla) having undergone nominalization, that is, the desententialization process which leads to the loss of illocutionary elements, mood/modal elements, tense and aspect, dispensability of complement, and loss of personal conjugation. However, the predicative verb in the RC retains only those verbal properties intact which show constraints on the tense and aspect of the RC. For example, the RC (4): *tar poRa* ('his reading') in the following is a desententialized constituent corresponding to the finite clause, that is, *she poRe* 's/he reads', which bears a verbal form *poRa* 'read-PART' showing the loss of the following clausal properties: loss of illocutionary elements, loss of mood/modal elements, loss of tense and aspect, dispensability of complement, and loss of personal conjugation in the desententialization scale.

(4) *tar poRa boi*  
he.POSS read.PAST.PART book  
'the book he read' (lit. 'his read book')

ii) Prenominal RC (Japanese): A finite clause achieves the property of prenominal RC (Japanese) having undergone nominalization, that is, desententialization leading to loss of illocutionary elements and mood/modal elements (as the predicative verb in Japanese does not agree with the subject, loss of personal conjugation is exempted from consideration on the desententialization scale). For example, the prenominal RC, that is, *nirwa de saiteiru* 'blooming in the garden' in the relativized sentence (2) is a desententialized constituent corresponding to a finite clause such as *nirwa de saiteimasu yo* 'It is bloomed in the garden, as I emphasize'. While the sentence-final par-



ticle *yo* is possible in this finite clause, it is not possible in the corresponding RC. The latter has the verbal form *saitairu* ‘bloom.PRES.PROG’ (\**yo*) showing both the loss of the morphosyntactic property of mood/modal elements, and, in the case of *yo*, loss of illocutionary properties on the desententialization scale.

- (2') [*niwa de saiteiru* (\**yo*) ] *hana ga kirei desu*.  
 [garden LOC bloom.PRES.PROG (MOD.PART)] flower TOP beautiful COP  
 The flower which is blooming in the garden is beautiful.  
 ‘The blooming flower is beautiful.’

iii) Correlative RC (Bangla): Correlative RCs (Bangla) lose only pragmatic properties, that is, their illocutionary element. For example, the RC *je chele-Ta kobita lekhe* (7a) is a constituent headed by *je* (who) containing the verbal form *lekhe* (write.PRES.HAB) that retains all the morphosyntactic properties of a clause intact, because the constituent RC *je chele-Ta kobita lekhe* (‘The boy writes poems’) itself can stand as a finite clause. It, therefore, loses only pragmatic properties, specifically illocutionary properties, when it is desententialized by becoming dependent on the matrix.

- (7a) *je chele-Ta kobita lekhe, she eshechilo*.  
 who boy-DET poem write.PRES.HAB s/he come.PAST  
 ‘The boy who writes poems came.’ (lit. ‘Who the boy writes poems he came.’)

Although there are some opposing views on the applicability of the idea that desententialization=nominalization, we see that it provides a clear ranking for RC patterns in Bangla and Japanese. RCs in these languages can be ordered according to the degree of loss of clausal properties from least to most desententialized as follows.

Correlative RC (Bangla) > Prenominal RC (Japanese) > Participial RC (Bangla)

A noteworthy point here is that the above ranking calls into questions attempts to treat Japanese RCs on a par with participial RCs in South Asian languages, for example, Bangla and Marathi. Although all types of RC involve some degree of desententialization, the degree is greater in participial RCs (Bangla) than in prenominal RCs (Japanese), which is in turn greater than in correlative RCs (Bangla). Hence, nominalization or desententialization can be understood as a process which a finite clause undergoes in order to achieve the properties of an RC by means of a pragmatic adjustment, that is, loss of illocutionary force and a number of morphosyntactic adjustments depending on the type of RC.

#### 4.2 Process of linking of relative clause with matrix clause: apposition, subordination, and coordination

The degree of structural adjustment occurring in the predicative verb of RCs in achieving nominalization=desententialization is related to the kinds of linking operation involved in joining the RC with its MC. We can generalize that the more an RC undergoes nominalization, the more dependence it shows in its placement in the matrix clause, and conversely, the less nominalization (desententialization) an RC undergoes, the less dependence it shows with respect to how it is embedded in the matrix clause. The processes of linking of RCs in the MCs can be classified as apposition, subordination, and coordination. The different kind of RCs in Japanese and Bangla

show various types of dependence on the matrix clause as follows.

- i) Participial RCs in Bangla involve nominalization with the loss of the maximum number of clausal properties. Prenominal RCs in Japanese also involve the reduction of a considerable number of clausal properties. In accordance with the generalization stated above, both of these RC patterns show a high degree of dependence in the MC: they are linked by apposition to one of the matrix arguments, yielding a complex NP formed by the combination of the RC and the nominal matrix argument. For example, in the relativized sentence [*niwa de saiteiru*] *hana ga kirei desu*, the RC *hana ga niwa de saiteiru* forms a complex NP, *niwa de saiteiru hana* with the argument, that is, *hana* of the MC in *hana ga kirei desu*, as its head.
- ii) Correlative RCs in Bangla involve the least nominalization=desententialization; accordingly they show minimum dependence or degree of subordination in the matrix clause. Its relationship to the matrix clause is closer to coordination, as shown in (7c).

(7c) *je kobita lekhe, she chele-Ta eshecilo.*  
 who poem write.PRES.HAB s/he boy-DET come.PAST  
 ‘The boy who writes poems came.’ (lit. ‘Who writes poems, that boy came.’)

Here, the RC *je kobita lekhe* does not form a constituent with any of the arguments of MC *she chele-Ta eshecilo*; rather, the head of the RC shows its relation by the REL-PRO *je* with the correlative marker *she* of the MC. Hence, the REL-PRO *je* relates, while the correlative marker *she* enhances the link between the RC and MC. The freedom of order of the correlatives in (7) also shows their relative lack of dependence on or subordination in the MC.

As this analysis shows, both participial RCs (Bangla) and prenominal RCs (Japanese) are realized in the MC in a manner fundamentally different from correlative RCs (Bangla), whereas RCs in English involve a kind of subordination which is intermediate between the two types of RCs. The most important point of this section is that the degree of subordination, or manner of realization, in the MC varies with the degree of desententialization (or nominalization) in the RC. Participial RCs (Bangla) and prenominal RCs (Japanese) are tightly bound to the head NP, while correlative RCs (Bangla) are more loosely bound. In fact, both participial RCs (Bangla) and prenominal RCs (Japanese) do not involve subordination but rather apposition, while correlative RCs (Bangla) involve coordination. The RC in English is the kind of subordinate clause which involves subordination, but the RCs in Japanese and Bangla of our concern do not involve subordination at all.

### 4.3 Referential coherence shared by the elements in relative clause with matrix clause

In principle, the RC and the MC share a referent when they are linked. The specific referents vary as to their morphosyntactic nature. They also vary with the availability of morphosyntactic means for relativization within the RC. The participial RC (Bangla), prenominal RC (Japanese), and correlative RC (Bangla) have the morphosyntactic means available to show the coherence between the reference shared by the RC and MC as follows.

- i) The participial RC (Bangla) does not have any overt means to share a referent with the element of MC. Unlike other prenominal RCs, it does not show any gap within its argument position corresponding to the head of the RC, because the properties of clause are condensed to its predicative verbal center by elimination of all finite properties. Therefore, it retains nothing to share as a referent with the head of the RC; semantically, it is restricted to subject and direct

object relatives. One might say here that the elimination of all finite properties correlates with an extremely restricted range of relativization.

ii) The prenominal RC (Japanese) shares a referent with its MC with the means available in the gap of its argument/adjunct position indicated by the predicative verb of RC. For example, the gap in the argument position of the RC, that is, \_\_\_\_\_ *saiteiru* [*hana ga kirei desu.*] shares a referent with the subject, that is, *hana* in the MC, that is, *hana ga kirei desu.* This shared referent supplies most of the information in resolving case-recoverability problem required for the RC interpretation of an NP (cf. Faquire 2014).

iii) The correlative RC (Bangla) has a relative pronoun, for example, *je* (which), and correlative pronoun, for example, *sbe* (that), which function respectively as the head of the RC and the MC. They refer and co-refer to each other, and in this way, they show coherence in cross-referencing.

#### 4.4 Implication of the noun phrase accessibility hierarchy for relative clause typology

In principle, an RC bears any of the six syntactic functions of subject, direct object, indirect object, oblique argument, possessor, and object of comparison with its head, on which relativization occurs. Languages have a varying range of means available to indicate these syntactic functions, thus restricting the possible syntactic functions of the relativized NP. The restriction is not random but organized in a hierarchy known as the Noun Phrase Accessibility Hierarchy (NPAH) developed by Keenan and Comrie (1977) as follows.

Subject > Direct Object > Indirect Object > Oblique Argument > Possessor/genitive > Object of comparison

With respect to the hierarchy, if a language can relativize any position low on the NPAH, it can relativize all higher positions. The strategy of RC formation applies to a continuous segment of the NPAH. If the strategy in any particular language applies at a point, in principle, it may cease to apply at any lower point on the scale of NPAH. The strategy either makes available categorical means for the access towards the lower position or abandons access at some lower position in the NPAH (cf. Lehmann 1986).

Languages provide a means of marking syntactic functions: subject, direct object, indirect object, oblique argument, possessor, and object of comparison, in order to access the NPAH. The type of means available in a given language depends on the strategy with which a particular RC is formed: i) gap strategy (Japanese), ii) pronoun retention strategy (Persian), iii) relative pronoun strategy (English), and iv) non-reduction strategy (Bangla, Hindi). The strategy which a language makes available can be ordered from strategies with least available means to those with most available means as follows.

Gap strategy (Japanese) < Pronoun retention strategy (Persian) < Relative pronoun strategy (English) < Non-reduction strategy (Bangla)

RCs formed by undergoing the relative pronoun strategy and the non-reduction strategy respectively bear case-marked relative pronouns (English) and a case-marked correlative maker (Bangla), both of which enable access to all six syntactic functions on the NPAH. However, languages such as Japanese, which use the gap strategy, make available implicit means at the argument position in the gap indicated by the predicative verb of the RC. The element available at the gap is required to be retrieved in order to show the syntactic function of the RC with respect

to its head. It is a coreferent noun which may show a variety of different case roles within that clause. The possible diversity of roles of the element in the gap position gives rise to the case-recoverability problem (cf. Givon 1990). Hence, the availability of means for overriding the case-recoverability problem is related to the success of the predictions of the NPAH.

The RCs (of the types shown in section 2) under discussion can be ordered in terms of their accessibility to relativization from RCs with the least available means (participial RCs) to RCs with the most available means (correlative RC), as follows.

Participial RC (Bangla) < Prenominal RC (Japanese) < Correlative RC (Bangla)

Japanese and Bangla make available very different means to indicate the syntactic function conditioning access to the NPAH. On the basis of the above discussion, the implications of the NPAH for Japanese and Bangla can be presented as follows.

#### 4.4.1 The Noun Phrase Accessibility Hierarchy in Japanese

Japanese prenominal RCs (1), in contrast to (3), bear a gap in their argument or adjunct position. Japanese makes the coreferent means available at the gap to show the syntactic function useful for the indication of the implication of NPAH. In principle, the element that can be retrieved in the gaps of the RC constituents [(11)~(16)] is the referent noun *hito* ‘man’, which is indicated by the predicative verb preceding it. In order to enhance the access to the scale of NPAH, the case marker showing the relation between the referent noun in the gap and the predicative verb of RC should be recoverable. The case marker for the referent noun in the position of subject, direct object, indirect object, oblique argument, possessor/genitive, and object of comparison in the scale of NPAH would be, respectively, *wa*, *wo*, *ni*, *ni tsuite*, *no*, and *yori* as presented in the following data (11)~(16).

- (11) Subject : \_\_\_\_\_<sub>i</sub> (*wa*) *hashitte itta hito*<sub>i</sub> [who ran away]  
 (12) Direct object : \_\_\_\_\_<sub>i</sub> (*wo*) *mita hito*<sub>i</sub> [whom I saw]  
 (13) Indirect object : \_\_\_\_\_<sub>i</sub> (*ni*) *tegami wo ageta hito*<sub>i</sub> [to whom I gave the letter]  
 (14) Oblique : \_\_\_\_\_<sub>i</sub> (*ni tsuite*) *hanashi wo shita hito*<sub>i</sub> [about whom I was talking]  
 (15) Genitive : \_\_\_\_\_<sub>i</sub> (*no*) *imouto-san wo watashi ga shitteiru hito*<sub>i</sub> [whose sister I know]  
 (16) Obj of Comp : \_\_\_\_\_<sub>i</sub> (*yori*) *watashi ga se ga takai hito*<sub>i</sub> [than whom I am taller]

We can see that, unlike correlative RCs (Bangla), the case markers corresponding to the referent noun are not readily recoverable, yielding a case recoverability problem as described earlier in section 4.4. The means available for overriding the case recoverability problems are only the sibling, or overtly realized case markers for arguments and adjuncts other than the gap, as specified in the template (17).

- (17) Japanese: Subject *ga* Indirect object *ni* Direct object *wo* *ageru* NP

By using this template, it is possible to indicate on which of the subject, direct object, and indirect object relativization occurs. For example, when the elements, ‘Subject *ga*’ and ‘Indirect object *ni*’ are available in an NP, for example, ‘Subject *ga* Indirect object *ni* \_\_\_\_\_<sub>i</sub> *ageru* NP’, then the remaining element with its case in the gap position would be ‘Direct object *wo*’. This is how what I have called the sibling complements provide an indication for the recovery of the case marker of the gapped argument, in this case, the direct object *wo*.

The gap strategy which makes the means available to recover the gapped case marker for the referent noun in Japanese is, in a sense, improvised, provided by morphosyntactic ecology. It makes the means for recovery available in terms of the other sibling arguments selected by the predicative verb. These serve to help recover the case markers for the subject (*wa/ga*) and direct object (*o*) but not the case markers for the remaining positions shown in (14)~(16). Since the elements in (14)~(16) (specifically, the gap position) exhibit a case recoverability problem, the head of the RC, *hito* ‘man’, in each of these cases, does not show coherence with the element in the gap position. On the basis of this phenomenon, it can be generalized that the prenominal RC in Japanese shows access readily to the NPAH from the indirect object position (13) to the higher positions, direct object position (12) and subject position (11), but not lower than that.

#### 4.4.2 Noun phrase accessibility hierarchy in Bangla

In Bangla, participial RCs and correlative RCs show two different applications of the NPAH.

##### 4.4.2.1 Participial relative clauses

The participial RC in Bangla can relativize in direct object position and the position higher than it, the subject position, on the NPAH, as shown below.

Position	Relative Clause
(18) Subject	: [ <i>e<sub>i</sub> doure jaoa</i> ] <i>lok-Ti<sub>i</sub></i> [run go.PAST.PART] man-DET ‘the running man’
(19) Direct object	: [ <i>amar e<sub>i</sub> dekha</i> ] <i>lok-Ti<sub>i</sub></i> [I.GEN see.PAST.PART] man-DET ‘the man seen by me’
(20) Indirect object	: ( <i>jar kache*</i> ) <i>amar chithi dewa</i> <i>lok-Ti*</i> [(to whom) I.GEN letter give.PRES.PERF] man-DET
(21) Oblique	: ( <i>jar shomporke*</i> ) <i>amar kotha bola</i> <i>lok-Ti*</i> [(for whom about) I.GEN speak.PRES.PERF] man-DET
(22) Genitive	: ( <i>jar bon-ke*</i> ) <i>amar chena</i> <i>lok-Ti</i> [(whose sister) I.GEN know.PRES.PERF] man-DET
(23) Obj of Comp	: ( <i>*jar cheye</i> ) <i>ami (hoi) lomba lok-Ti</i> [(than whose) I (COP) tall] man-DET

As the above data show, the properties of the participial RCs in (18) and (23) are condensed to their verbal center; they therefore do not retain the means to indicate the syntactic function between the RC and their head *lok* ‘man’. On the basis of these facts, it can be generalized that participial RCs (Bangla) show access to the NPAH only from the direct object position (19) to subject position (18).

##### 4.4.2.2 Correlative relative clauses

Correlative RCs in Bangla make available the means of a case-marked REL-PRO, *je* ‘which’, which enable relativization on all the positions in the scale of NPAH.

Position	Relative Clause
(24) Subject	:je lok-Ti [doure gelo ] RP man-DET [run away.PAST.IND] 'the man [who ran away]'
(25) Direct object	:je lok-Ti-ke [ami gotokal dekhechi ] RP man-DET-DO [I yesterday see.PAST.PERF] 'the man [whom I saw yesterday]'
(26) Indirect object	:je lok-Ti-r kache [ami chithi diechi ] RP man-DET-GEN IO [I letter give.PAST.PERF] 'the man [to whom I gave the letter]'
(27) Oblique	:je lok-Ti shomporke [ami kotha bolchilam ] RP man-DET OB [I speak.PAST.PROG] 'the man [about whom I was talking]'
(28) Genitive	:je lok-Tir [bon-ke ami chini ] RP man-DET.GEN [sister-DO I know.PRES.SIMPLE] 'the man [whose sister I know]'
(29) Obj of Comp	:je lok-Ti-r [cheye ami (hoi) lomba ] RP man-DET-GEN [COMP.PART I (COP) tall ] 'the man [than whom I am taller]'

In the above RCs, we can see that the case markers *o* (24), *-ke* (25), *-r kache* (26), *shomporke* (27), *-(Ti)r (bon)-ke* (28), and *-(Ti)r cheye* (29), respectively, indicate the shared referents for the position of subject, direct object, indirect object, oblique argument, possessor/genitive, and object of comparison in the scale of NPAH. Therefore, it can be generalized that the correlative RCs (Bangla) show access all position in the scale of NPAH.

### 5. The relative clause interpretation of noun phrases in Japanese

The language-specific characteristics of Japanese revealed in the foregoing comparative analysis can be of use to deal with one of the most controversial issues regarding RC in Japanese, introduced at the outset of this paper. To recall this issue, the constituent, for example, *Tokyo e iku* ('Tokyo going', i.e. bound for Tokyo) with the head of *Shinkansen* and *hanashi*, respectively, form identical complex NPs, (30) and (31), in the sense that they share a constituent, *Tokyo e iku* as follows.

- (30) *Tokyo e iku hanashi*  
Tokyo LOC go.INF talk  
'talk about going to Tokyo'
- (31) *Tokyo e iku Shinkansen*  
Tokyo LOC go.PRES.IND Shinkansen  
'Shinkansen which goes to Tokyo' or 'Tokyo going Shinkansen'

The issue is whether the both kinds of complex NPs, (30) and (31), form RCs. Japanese, as compared to Bangla, provides a perplexing but relatively powerful linguistic means for resolving this issue. The linguistic evidence shows that the complex NP in (30) and the complex NP in (31) are distinct from each other. The NPs of our concern are underpinned by some conditions: proce-

dural and declarative (substantive), which serve to distinguish the NP (30) and the NP (31), as described in section 5.1.

### 5.1 Distinguishing noun phrases with the procedural condition

The process of nominalization (i.e. desententialization) introduced in section 4.1 can be used as a means for distinguishing the two types of NPs, (30) and (31), depending on the source of the head. This approach calls into question Matsumoto's (1997) semantic-pragmatic approach in interpreting the NMCs as RCs, which does not posit a distinction between these two types of complex NPs. The constituents of (30) and (31), of our concern, can be seen as a transformation of the following common finite clause (32) through a two-phase process as shown below.

- (32) *Shinkansen ga Tokyo e ikimasu yo.*  
 Shinkansen TOP Tokyo LOC go.FUT.IND MOD.PART  
 'Shinkansen will go to Tokyo, I emphasize.'

In the first phase of transformation, the finite clause (32) is transformed into a clause (33) stripped of certain of its clausal properties (specifically, illocutionary and modal properties) by undergoing a process of desentential nominalization as follows.

- (33) *Shinkansen ga Tokyo e iku*  
 Shinkansen TOP Tokyo LOC go.INF  
 'going of Shinkansen to Tokyo'

In the second phase of the transformation, the derivation of NP (30) and NP (31) can be seen as the result of two different processes as follows.

- i) The transformation process involved in the formation of NP (30) can be seen as the apposition of a noun to the head, that is, *hanashi* of the NP, that is, (*Shinkansen ga Tokyo e iku hanashi*). Hence, the head noun, that is, *hanashi* in the NP (30), to which apposition occurs is external to the nominalization source.
- ii) The transformation process involved in the formation of another type of NP (31) can be seen as the product of transformation of the nominalized clause (33) into an NP (31) [*Tokyo e iku*] *Shinkansen* by further nominalization. Hence, *Shinkansen ga Tokyo e iku*, which itself is the product of nominalization undergoes further nominalization to form an NP (31). I point out here that the NP with the lexical head noun in *kyonen mita eiga* 'movie which was watched (by me) last year' is treated as a transformation of the sentence *kyonen eiga wo mita* '(I) watched movie last year', by Makino (1968), along these lines.

Hence, the NP (31) is formed by two simultaneous processes of nominalization: i) nominalization for removal of clausal properties and ii) nominalization for transformation to an NP taking as head of any of the arguments of the nominalized clause, receiving an RC interpretation. This contrasts with NPs which undergo nominalization but employ the head in NP from an outside source of the nominalized clause.

### 5.2 Distinguishing noun phrases with the declarative (substantive) condition

As we saw in the foregoing discussion in section 5.1, the complex NP in (30) and NP in (31) are distinct from each other in terms of their formation. The NPs which pattern with the NP in (31) receive an RC interpretation when they satisfy the following conditions:

- i) The head of NP as a subject or object of MC occupies a nominal position in a finite clause, that is, MC. For example, the NPs in (30) and (31) with two different heads showing an identical pattern hold a common argument position of MC, for example, \_\_\_\_\_*wa omoshiroi desu* ‘\_\_\_\_\_ is interesting’.
- ii) They pattern with pseudo-cleft sentences derived from them; for example, out of the two NPs, the NP in (31) patterns with the pseudo-cleft sentence *Tokyo e iku no wa Shinkansen desu* ‘What will go to Tokyo is Shinkansen’, whereas the NP (30) does not, since the pseudo-cleft constituent derived from it is \**Tokyo e iku no wa hanashi desu* ‘What will go to Tokyo is talk’ is not an acceptable sentence.
- iii) They are retransformable into verbal sentences. For example, out of the two NPs, the NP in (31) can be retransformed into a sentence, for example, *Shinkansen ga Tokyo e iku*, whereas the one in (30) cannot be, since its transformation is \**hanashi ga Tokyo e iku* ‘talk will go to Tokyo’, which is not an acceptable sentence (cf. Teramura 1969).

Hence, the complex NP (31) *Tokyo e iku Shinkansen*, in contrast to the one in (30), *Tokyo e iku hanashi*, can be recognized as an RC, since it satisfies all the three conditions, while the latter, *Tokyo e iku hanashi*, does not satisfy any but the first of the three conditions.

### 5.3 Relative clauses as a subset of noun-modifying clauses

RCs are Nominal Modifying Constructions (NMCs) which with their heads form RC constituents. However, there is a controversy over whether all the NMCs partaking in the NPs are RCs, and conversely, all the RCs with their heads form endocentric NPs. The participial RCs (Bangla), prenominal RCs (Japanese), and correlative RCs (Bangla) show three different kinds of phenomena with regard to the set they form within the larger sets of NMCs.

- i) In participial RCs of Bangla, the participial clauses act as prenominal RCs; therefore, the RCs and NMCs form a constituent.
- ii) In prenominal RCs in Japanese, there has been a controversy as to whether RCs form a subset under NMCs. The constituent, for example, *niwa de saiteiru* (1) in [*niwa de saiteiru*] *hana ga kirei desu* (2) acts as a modifier which modifies a head noun to form an endocentric NP, that is, *niwa de saiteiru hana*. It also acts as a clause dependent on the MC, that is, *hana ga kirei desu* in the sentence *niwa de saiteiru hana ga kirei desu*. Accordingly, the NPs and RCs share a constituent, that is, *niwa de saiteiru*, in a relativized sentence, for example, [*niwa de saiteiru*] *hana ga kirei desu* (2). These NMCs in Japanese belong to two different sets; a set which receives an RC interpretation of RC and one which does not. Therefore, RCs form a subset of NMCs in Japanese.
- iii) In correlative RCs in Bangla, the RCs are adjoined with their MCs where the relative pronouns in RCs and correlative pronouns in MCs respectively refer and co-refer to each other in order to form RC constituents; therefore, they do not involve embedding and do not form NPs. Correlative RCs are a kind of clause which does not form an NP with the heads; therefore, they do not fall into the category of NMCs. Hence, the correlative RCs are outside the set of NMCs.

## 6. Conclusion

Above I have presented a comparative analyses of RCs in Japanese and Bangla along the parameters of i) application of nominalization or desententialization in the relative clause, ii) linking of the relative clause with the matrix clause, iii) the nature of referential coherence, and iv) implications of the Noun Phrase Accessibility Hierarchy. These comparisons reveal the language-specific



characteristics of Japanese and help to resolve the controversy on the interpretation of complex NPs as RCs. The outcome of these analyses show that the complex NPs formed by a two-phase process of desentential nominalization with the head of any argument of its source finite clause satisfy some morphosyntactic conditions to be an RC. The NP formed through this process, therefore, receives an RC interpretation because its head shares a referent with the element (called the co-referent noun) in the gap position indicated by the predicative verb of the RC.

### List of abbreviations

ADJ adjective; COMP complementizer; COP copula; DEF definite; DEM demonstrative; DET determiner; DO direct object; FUT future; GEN genitive; HAB habitual; IND indicative; INF infinitive; IO indirect object; LOC locative; MOD modal; PART particle; PERF perfect; PL plural; POSS possessive; PRES present; PROG progressive; QUAN quantifier; RP/REL-PRO relative pronoun; REL relative; PRO pronoun; TOP topic.

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## 日本語関係節の再検討 ——ベンガル語を参照しながら——

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### 要旨

本研究の目的は、四つのパラメータ、即ち i) 関係節における名詞化の作用、ii) 主節と関係節の連携性、iii) 参照的一貫性、iv) 名詞句の接近可能性階層、に沿って、関係節における日本語対ベンガル語の対照分析を行い、日本語の関係節に見られる言語固有の特性を明らかにすることである。関係節における日本語固有の特性は、名詞句形成に必要な二つの条件：i) 過程的条件として行われる名詞化の処理基準と、ii) 実質的条件として満たし得る形態統語論的基準に基づくものである。そのためこの二つの条件は、名詞句の関係節としての解釈を導くものである。また、この条件を軸にした分析から、定形節から二段階の過程を経て名詞化され、定形節の何れかの項からなる名詞句が形成される、そのような名詞句のみが、関係節としての形態統語論的基準を満たすことを示す。つまり、このプロセスを経て形成された名詞句は、関係節としての解釈を受ける。なぜなら関係節の述語動詞が示すギャップの位置に生じ得る要素と主要部名詞が参照的一貫性を共有するからである。

**キーワード**：関係節、名詞句、名詞化、参照的一貫性、名詞句の接近可能性階層