

日本語の定性効果についての覚え書き

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A Note on the Definiteness Effects in Japanese

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本論文では、一致のない言語と言われる日本語の名詞句に定性名詞句 (definite NP) と不定性名詞句 (indefinite NP) の区別があるか否かについて、英語と比較して考察する。ここでは、英語の each を用いた binominal (二項名詞) 構文と adverbial (副詞的) 構文を取り上げ、日本語の「それぞれ」を用いた二項名詞構文と副詞的構文と比較する。英語の binominal 構文と adverbial 構文と同様に、日本語の相当構文にも、先行詞の名詞句に課される意味制限が存在し、目的語となる名詞句にも意味制限があることを指摘する。一般的に日本語の名詞句に義務的な複数形の制限はないが、特殊な構文中で先行詞となるときに複数形の marking が顕在化する必要があると主張する。

また、binominal 構文と adverbial 構文には、統語的なふるまいの違いがあることを指摘する。

第1節では、英語の binominal 構文には、定性効果があることを述べる。第2.1.節では、日本語の二項名詞構文と副詞的構文との統語的な相違 (再構築効果) について考察する。そして、第2.2.節で、日本語の二項名詞構文の定性効果について述べる。第3節で、日本語のこの二構文の解釈の局所性について述べ、結論を述べる。

0. Introduction

DP analysis assumes that there is a distinction between definite NPs and indefinite NPs across languages. There are languages that makes this distinction evident in their syntactic and semantic structures such as English and there are other languages that do not show this distinction overtly. Japanese is said to be the latter. In this note, I will show that there are pieces of evidence that Japanese also has this distinction.

Section 1 discusses definiteness effects in English binominal sentences which take two NPs (Range-NPs and Distributing NPs) as arguments. I will show that both

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R-NPs and D-NPs (first discussed in detail in Choe 1987 and Safir and Stowell 1988) have semantic restrictions in binominal *each* sentences. In particular, D(istributing)-NPs in the object position of binominal *each* sentences have to be indefinite.

Section 2.1 introduces Japanese binominal sentences, contrasting with Japanese adverbial sentences. Section 2.2. shows that Japanese binominal sentences have semantic restrictions on the D-NP. Section 3 deals with the locality of the interpretation of the D-NP with its antecedents and Section 4 concludes the note.

1. Definiteness Effects in English binominal sentences

It is well known that in English *there*-constructions some determiner NPs can occur and some cannot. (Keenan 1987)

- (1) a. There are {*some/many several/three/no*} students in the garden.
- b. *There is {*the / every*} student in the garden.
- *There are *most* students in the garden.

Many studies on quantifiers also show that the scope of indefinites is not uniform, either. (Szabolcsi 2000, 2010)

In binominal *each*-constructions (Postal 1974, Choe 1987, Burzio 1986, Safir and Stowell (S&S) 1988, Sutton 1994), syntactic properties as well as semantic properties are explored.¹

- (2) a. The boys have *each* seen one balloon. (adverbial *each*)
 - (i) “The boys have each seen possibly a different set of one balloon”
(*The boys* > *one balloon*)
 - (ii) “There is one balloon such that the boys have each seen it.”
(*one balloon* > *the boys*)
- b. [The boys] have seen [one balloon *each*]. (binominal *each*)

R-NP
D-NP

 - (i) “The boys have each seen possibly a different set of one balloon.”
(R-NP > D-NP)
 - #(ii)# “There is one balloon such that the boys have each seen it.”
(#D-NP > R-NP)

Following Safir and Stowell (1988), the subject NP in (2b) is called R(ange)-NP and the constituent [*one balloon each*] is called D(istributing)-NP. The R-NP expresses the range of the domain over which the D-NP is distributed. In binominal sentences, the R-NP always has scope over the D-NP. For instance, (2b) only has a reading (2bi) in which *the boys* takes scope over *one balloon*.

The distribution of binominal *each* is much more restricted than that of adverbial *each* as Szabolcsi (2010) shows.

- (3) a. The boys have *each* agreed to stop fighting. (adverbial *each*)
b. *The boys have agreed to stop fighting *each*. (binominal *each*)
- (4) a. The boys have *each* seen {this film /most of the films/every film.} (adverbial)
b. The boys have seen {*this film *each*/*most of the films *each*/*every film *each*.} (binominal)
- (5) a. The boys have *each* seen {six films /more films/less than six films.} (adverbial)
b. The boys have seen {six /more than six /less than six} films *each*. (binominal)

As are illustrated in (3a), the adverbial *each* sentences are well-formed even without object arguments. The adverbial *each* can appear in intransitive sentences. On the other hand, as shown in (4) and (5), binominal sentences have semantic restrictions on the kind of quantified NPs that they can take in the object position.

As Sutton observes, the semantic restrictions on the D-NPs in binominal sentences do not exactly coincide with that of the NPs that are disallowed in *there*-sentences in (1). This observation is summarized in (6). The judgements are based on S & S (1988) and Sutton (1994):

(6) Semantic Restrictions on the D-NPs in binominal sentences

allowed	disallowed
indefinite numeral NPs (i.e. <i>one book</i>)	* <i>the</i> N
modified numeral NPs (e.g. <i>at most five</i> Ns, <i>fewer than five</i> Ns)	*a (<i>certain</i>) N
<i>how many</i> Ns	* <i>some</i> Ns ²
<i>two or more</i> NP ₅	*most Ns, *all Ns
<i>more than 50% of the</i> NP	*definite QPs (e.g. * <i>these</i> Ns, *conjoined NPs)
	* <i>each</i> N, * <i>every</i> N
	* <i>no</i> N, * <i>no</i> Ns, * <i>few</i> Ns
	* <i>both of the</i> NP

On the other hand, adverbial *each* sentences have the following semantic restrictions on the object NP, if they have one. Notably definite NPs are allowed in the object position in adverbial sentences.

(7) Semantic restrictions on the object NPs in the adverbial sentences

allowed	disallowed
indefinite numeral NPs (i.e. one book)	?*every N, ?*each N
modified numeral NPs (e.g. <i>at most five</i> Ns, <i>fewer than five</i> Ns)	*no N, *no Ns,
how many Ns	
definite QPs (e.g. <i>these</i> Ns, conjoined NPs, <i>all the</i> Ns, <i>few</i> Ns, <i>some</i> Ns, <i>certain</i> Ns, <i>most of the</i> Ns)	

The differences between binominal and adverbial sentences discussed in this section are summarized in the following table.

(8) the differences between binominal and adverbial sentences

	binominal	adverbial
scope	only R-NP > D-NP	subject-wide scope or object-wide scope
reconstruction effects	Yes	No (except the NP is an indefinite numeral) ³
indefiniteness requirement on the object D-NP	Yes	No

The two constructions in English differ in scopal properties, reconstruction effects and the indefiniteness requirement.

2.1. Reconstruction Effects of Japanese binominal sentences

Similar structures in Japanese with binominal and adverbial quantifier *sorezore* was studied in Sakaguchi (1998) in Chomsky's Government and Binding framework.⁴

- (9) a. [San=nin-no otoko-ga] sorezore [Hanako-o]
 3=cl-gen man-nom each H-acc
 aisi-teir-u. (adverbial *sorezore*)
 love-asp-pres
 "Three men each love Hanako."
 R-NP D-NP
- b. [San=nin-no otoko-ga] sorezore [hito=ri-no zyosei-o]
 3=cl-gen man-nom each 1-cl-gen woman-acc
 aisi-teir-u.
 love-asp-pres
 "Three men love one woman each." (binominal *sorezore*)

Before discussing the semantic restrictions on the object NPs, it will be shown that adverbial *sorezore* sentences in (9a) differs in structure from that of binominal

sorezore in (9). I will argue that binominal *sorezore* can be separated syntactically from adverbial *sorezore* because otherwise one cannot account for the differences in acceptability when one applies scrambling with *sorezore*, passivization with *sorezore*, and relativization of the object NP.

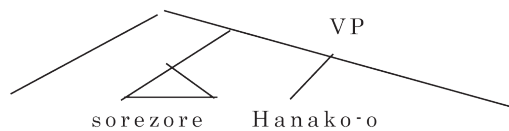
Suppose (9a) and (9b) are identical. Then one cannot account for the difference in acceptability between the following sentences when [*sorezore* NP-o] is scrambled to the clause-initial position.⁵

- (9a) *?[[*Sorezore* [*Hanako-o*]]_i [*san=nin-no otoko-ga*
 each H-acc 3-cl-gen man-nom
t_i aisi-teir-u] koto (adverbial *sorezore*)
 love-asp-pres fact
 “*? the fact that [*Hanako* each] three men love *t_i*.”
- (9b) [[*Sorezore* [*hito=ri-no zyosei-o*]]_i [*san=nin-no otoko-ga*
 each 1-cl-gen woman-acc 3-cl-gen man-nom
t_i aisi-teir-u] koto (binominal *sorezore*)
 love-asp-pres fact
 “the fact that [*one woman* each]_i three men love *t_i*”

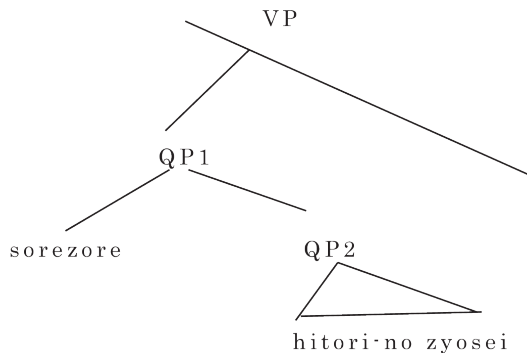
The difference in acceptability between (9a') and (9b') can be accounted for by assuming that [[*sorezore*] *D-NP-o*] in (9b') forms a constituent with *sorezore* but the [*sorezore* [*Hanako-o*]] does not.

The following structures (9a'') and (9b'') were assumed in Sakaguchi (1998).

(9a'') adverbial *sorezore*



(9b'') binominal *sorezore*



“the fact that [one woman each] was loved by three men”

Relativization of the object NPs is exemplified in (13a) and (13b).

- (13)a. [[San=nin-no kyouzu-ga sorezore e home-ta] [gakusei]-wa]
 3=cl-gen professor-nom each e praise-pst student-top
 Taroo-da-tta. (adverbial *sorezore*)
 “the student who three professors each praised e was Taroo.”
 -cop-pst
- b.*?? [[San=nin-no kyouzu-ga sorezore e kai-ta] [i=ssatu-no
 3=cl-gen professor-nom each e write-pst 1=cl-gen
 hon]-wa] omosiroka-tta. (binominal *sorezore*)
 book-top interesting-pst
 “*??One book that three professors each e wrote was interesting.”

The difference in acceptability between (13a) and (13b) can be accounted for by the structural difference between adverbial and binominal sentences. In binominal sentences, the object NP, namely the D-NP, forms a constituent with *sorezore*. Therefore, it is difficult to relativize the D-NP, stranding *each* in the clause.⁷ On the other hand, in adverbial sentences, the object NP does not form a constituent with *sorezore*, so it can be relativized. This difference can be captured by a constraint such as Chomsky’s Subjacency (1973) or Huang’s CED (1982).

In this section, it was shown that Japanese binominal sentences have syntactic properties that are distinct from adverbial sentences. Especially, it was shown that in binominal sentences *sorezore* forms a constituent with object D-NP and that they show reconstruction effects in instances of scrambling with *sorezore* and passivization with *sorezore*.

2.2. Definiteness Effects in Japanese binominal sentences

In this section, it will be shown that Japanese binominal sentences have semantic restrictions comparable to those of English binominal sentences.

The two NPs in the binominal construction are subject to the following semantic restrictions.

- (14) i) The R-NP must be interpreted as a plural NP.
 ii) The D-NP must always be cardinal and indefinite.

Semantic restrictions (14) in the binominal sentences apply both in English and Japanese. The following claim is made for Japanese:

(15) **Antecedent requirement for Japanese NPs:**

Japanese NPs have to be explicitly marked plural when they are antecedents of another NP.

This can be shown in the following case where the reflexive *zibun* suffixed with =*tati* requires an antecedent with overt plural marking as in (16b).

- (16) a. #*Otoko-wa* [*zibun=tati-o*] *aisi-teir-u*.
 man-top self=pl-acc love-asp-pres
 “#the man loves self=pl.”
 b. {*Otoko=tati-wa*/ *San=nin-no otoko-wa*}
 man=pl-top/ 3=cl-gen man-top
 [*zibun=tati-o*] *aisi-teir-u*.
 self=pl-acc love-asp-pres
 “The men/the three men love themselves.”

(16a) is not acceptable in the reading where *zibun=tati* is coreferential with *otoko*. It only has an interpretation in which *zibun=tati* refers to the speaker and others.⁸

The following examples show that the R-NP in Japanese binominal sentences must be interpreted as plural according to (15).

- (17) a. *[*Hito=ri-no otoko*]-ga *sorezore* [*huta=ri-no zyosei*]-o
 1=cl-gen man-nom each 2=cl-gen woman-acc
 aisi-teir-u.
 love-asp-pres]
 “*One man loves two women each.” (binominal *sorezore*)
 b. *?*Otoko-wa sorezore* [*huta=ri-no zyosei*]-o
 man-top each 2=cl-gen woman-acc
 aisi-teir-u.
 love-asp-pres (binominal *sorezore*)

“*?The man loves two women each.”

The sentences in (17) are unacceptable because the antecedent R-NPs of the binominal are not plural, violating (15). To avoid the oddity, the R-NP *otoko* has to be explicitly marked with =*tati* or explicitly modified by a numeral quantifier.

Japanese NPs are generally unmarked with respect to definiteness. However, demonstratives such as *sono* (that) and *kono* (this) used in front of a noun are overt marker of definiteness.

The following binominal sentences in (18b) show that they are unacceptable as binominal sentences because their D-NPs are definite or non-counting bare NPs.⁹

- (18) a. [San=nin-no gakusei]-ga *sorezore* [i=ssatu-no hon]-o
 3=cl -gen student-nom each 1-cl-gen book-acc
 yon-da. (binominal *sorezore*)
 read-pst
 “Three students read one book each.”
 b. #[San=nin-no gakusei]-ga *sorezore* [!kore=ra-no /subete-no
 3=cl -gen student-nom each these-gen/all-gen
 /hotondo-no/ hon]-o yon-da
 /most -gen book-acc read-pst (binominal *sorezore*)
 #“Three students read {these/all the books/ most books } each.”

Semantic restrictions on the D-NP, similar to the ones in English binominals are exhibited in Japanese binominal sentences in (19).

(19) Semantic restrictions on D-NPs in Japanese binominal *sorezore* in Sakaguchi(1998)

allowed	not allowed
counting bare numeral indefinites <i>i=ssatu-no hon</i> (one book)	definite NPs and their conjunction <i>kono hon</i> (this book), proper names (<i>Hanako-to Taroo</i>) non-counting bare NPs (<i>hon, otoko</i>) ¹⁰

On the other hand, the adverbial *sorezore* will allow definite NPs in the object position as in (20).

- (20)a. [San=nin-no gakusei]-ga *sorezore* [inu-o ka-tteir-u (adverbial *sorezore*)
 3=cl -gen student-nom each dog-acc keep-asp-pres
 “Three students each have a dog.”
 b. [San=nin-no gakusei]-ga *sorezore* [!Chomsky-no hon/
 3=cl -gen student-nom each C-gen book
 korera-no hon]-o yon-da.
 these-gen book -acc read-pst (adverbial *sorezore*)
 “Three students each read Chomsky’s book/ these books.”
 c. [San=nin-no gakusei]-ga *sorezore* [Taroo-to Hanako]-o
 3=cl -gen student-nom each T-and H-acc
 tazune-ta. (adverbial *sorezore*)
 visit-pst
 “Three students each visited Taroo and Hanako.”

Crucially, the interpretation (20c) of *Taroo and Hanako* is not distributed over the three students. For instance, (20c) does not have an interpretation where student 1 visited Taroo, and student 2 visited Hanako, and student 3 visited Taroo.

In this section, it was shown that binominal sentences in Japanese have semantic restrictions on D-NPs that they had to be a counting numeral and indefinite. On the other hand, the object NP of the adverbial *sorezore* can be definite. Furthermore, it is claimed that the plural marking is required even in Japanese when the NP is the antecedent of another NP in the sentence,

3. Locality of the scope and anaphoric relations

In this section, the anaphoric properties of object NPs in binominal and adverbial sentences are investigated. It will be shown that both binominal and adverbial sentences obey the locality condition. Binominal *sorezore* and adverbial *sorezore* are both considered to be adjuncts and their interpretations are clause-bound as the following examples show.

(21) (adverbial *sorezore*)

[Taroo-to Ziroo]_i-ga [_{CP} [Hanako-to Yoshiko]_j-ga *sorezore**_{i/j} hon-o
 T-and Z -nom H-and Y-nom each book-acc
 ka-tta to] i-tta.
 buy-pst cp say-past
 “Taroo and Ziroo said that [Hanako and Yoshiko] each bought a book.”

(22) (binominal *sorezore*)

[Taroo-to Ziroo]_i-ga [_{CP} [Hanako-to Yoshiko]_j-ga *sorezore**_{i/j}
 T-and Z -nom H-and Y-nom each
 [i=ssatu-no hon]-o ka-tta to] i-tta.
 1=cl -gen book-acc buy-pst cp say-past
 “Taroo and Ziroo said that [Hanako and Yoshiko] bought one book each.”

The adverbial sentence (22) only has an interpretation in which Taroo and Jiroo said that Hanako bought a book and that Yoshiko bought a book. It does not have an interpretation in which Taroo said Hanako bought a book and Ziroo said that Yoshiko bought a book. Similarly, (21) only has an interpretation in which the antecedent of *sorezore* is Hanako and Yoshiko. Thus, just as in English, distributivity of the adjunct in Japanese is clause-bound as pointed out in Szabolcsi (2010).

4. Concluding Remarks

The formalization of this interesting linguistic phenomenon in terms of the latest minimalist framework was not attempted here, but I hoped to have shown that the non-argument adjunct *each* in binominal and adverbial sentences impose syntactic and semantic restrictions on their antecedents. My tentative conclusion is that Japanese is not totally without agreement features as is often claimed in the literature. How to implement it will be left for future research.

*I would like to thank my colleague Lyn Swierski for improving my styles of English and an anonymous reviewer for invaluable, insightful comments on this paper. All the remaining errors are my own.

Notes

1. “Binominal” is a term first used in Safir and Stowell (1988), which expresses that it takes two nominals as arguments.
2. “Some Ns” is said to have two types of interpretation, differentiated by an accented *some* and a deaccented *s’m*, as pointed out in Jackendoff (1972). Binominal sentences disallow definite (specific) reading of accented *some* as Distributing-NPs.
3. An anonymous reviewer asks how the object-wide scope of the adverbial *each* is obtained. One analysis is in Sakaguchi (1998, 1999) where the LF-phrase structure of Beghelli and Stowell (1997) is utilized. Adverbial *each* is base-generated and adjoined to its antecedent plural NP. The adjoined NP moves to the Spec of the Distributive Phrase, satisfying the c-command requirement. The numeral object NP of the adverbial sentence is moved to the Spec of RefP (similar to the topic position) and take the wide scope. See Sakaguchi (1999:236) for details.
4. In this paper, the following abbreviations are used in the glosses:
 - top: topic marker
 - nom: nominative case
 - acc: accusative case
 - gen: genitive case
 - cl: classifiers
 - pl: plural marker
 - asp: aspectual verb
 - pres :present tense morpheme
 - pst: past tense morpheme
 - pass: passive morpheme
 - asp: aspect marker
 - cop: copula

Q: interrogative particle

cp: complementizer

5. Scrambling of the object NP without *sorezore* is possible for both adverbial and binominal structures.

(i)a. [[Hanako-o]_i [san=nin-no otoko-ga] *sorezore*
 H-acc 3-cl-gen man-nom each
 t_i aisi-teir-u]] koto (adverbial *sorezore*) love-asp-pres fact
 “the fact that [Hanako] three men each love t_i.”

b.] [Hito=ri-no zyosei-o]_i [san=nin-no otoko-ga]
 1-cl-gen woman-acc 3-cl-gen man-nom
 sorezore t_i aisi-teir-u]] koto (binominal *sorezore*)
 love-asp-pres fact
 “the fact that [one woman]_i three men each love t_i

6. As shown in (10), the scope relation between the D-NP which includes *each* and the R-NP does not differ after the application of the A-movement. The scope can be assigned at pre-Spell-Out or it can be assigned at LF. If the scope is assigned at LF, A-movement is undone at LF. The problem of Radical Reconstruction may arise, as discussed by the reviewer and in Saito (1989). One may have to use Chain-formation to assign scope.
7. In the structure of binominal sentences (9b”), QP₂ cannot be moved to be the head of the relative clause, leaving the c-commanding QP₁ *sorezore* behind. This will cause CED violation or ECP violation.
8. The suffix =*tati* is not strictly a plural suffix. Kuno (1973:26) observes that =*tati* can attach to a proper name as in *Taroo*=*tati* meaning not “Taroos” (some people bearing the name Taroo) but “Taroo *et.al.*” The morpheme =*tati* appears to induce collective reading. See also Ueda (2014) for the analysis of =*tati*, comparing with Chinese *-men*.
9. According to the reviewer, (18b) sounds acceptable. Those who allow (18b) may be getting the adverbial interpretation of *sorezore* or the token reading of the definite object NP in the binominal sentences. In the latter case, those who allow the distributive reading of (18b) may be getting the reading where *korerano hon* (these books) differ according to the three students or the reading where each of the three students read Chomsky’s *Barriers* that they ordered from the store. I think that these readings do not really constitute counterexamples to the analysis presented here.
10. Notice that the non-counting non-numeral bare NPs (i.e. common nouns such as *hon*) are treated on the par with other definite NPs in Japanese binominal sentences. Non-numeral non-counting bare NPs do not count as D-NPs although they are allowed in the object position of the adverbial *sorezore* sentences.

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