

The fine structure of clausal right-node raising constructions in Japanese

Shûichi Yatabe and Kei Tanigawa
University of Tokyo

1 Introduction

The aim of this paper is to determine the details of the syntactic structure of Japanese sentences like the following, which involves right-node raising (RNR).

- (1) [Hanako ga] [yama e], [Masao ga]
[Hanako NOM] [mountain to] [Masao NOM]
[kawa e] itta.
[river to] GO-PAST
‘Hanako went to the mountain and Masao went to the river.’

In this paper, we assume that the HPSG-based analysis of right-node raising advocated in works such as Yatabe & Tam (2017) is on the right track; in other words, we assume that a sentence like this involves coordination of two normal constituents out of which something is right-node-raised. Even on that assumption, there remain several possibilities as to what type of syntactic constituents are coordinated in a sentence like (1), and that is the question that will be addressed in this paper.

We will consider the following three possible analyses of this type of sentence. The first possibility we consider is that (1) may involve coordination of two tensed clauses, as shown in (2).

- (2) [[Hanako ga yama e itta], [Masao ga kawa e itta]]
→ Hanako ga yama e, Masao ga kawa e itta

In this analysis, what is right-node-raised in (1) is the tensed verb *itta*.

The second possibility we consider is that the sentence may involve coordination of two tenseless clauses, as shown in (3).

- (3) [[Hanako ga yama e ik-] [Masao ga kawa e ik-]] ta
→ Hanako ga yama e, Masao ga kawa e ik-ta

In this analysis, what is right-node-raised is the verb stem *ik-*. Since the verb stem is a bound morpheme,

the pre-RNR structure that is posited in this analysis is not something that can be used as a surface form. The structure becomes a pronounceable sentence only after the verb stem is right-node-raised and the verb stem and the sentence-final tense morpheme *-ta* are combined to yield a phonological word *itta*.

And the third possible analysis we will consider is one in which sentence (1) is derived by applying right-node raising to the sentence in (4), in which the first clause ends with *iki*, the so-called infinitive form of the verb *ik-* ‘to go’.

- (4) Hanako ga yama e iki, Masao ga
Hanako NOM mountain to go-INF Masao NOM
kawa e itta.
river to GO-PAST
‘Hanako went to the mountain and Masao went to the river.’

A clause ending with the infinitive form of a verb is often interpreted as being semantically conjoined with the immediately following clause, while it is not clear whether the first clause in such a structure is syntactically a conjunct or an adjunct. In this analysis, in which (4) is taken to be the pre-RNR form of (1), what is right-node-raised out of the first clause must be the infinitive form *iki*, and what is right-node-raised out of the second clause must be either the verb stem *ik-* or the tensed verb *itta*. We view this third analysis as something conceivable because it has been shown by Shiraishi & Abeillé (2016) that there is a type of right-node raising in which slightly different forms of a verb are right-node-raised as if they were identical to each other.

It will be our contention in this paper that there is evidence that the first and the second analysis are both allowed in the grammar of Japanese whereas there is no evidence that the third analysis is allowed in the grammar. More specifically, we will argue that the sentence in (1) is structurally ambiguous between the first analysis and the second analysis, and that there are sentences that are amenable only to the first type of analysis as well as sentences that are

amenable only to the second type of analysis.

The findings reported in this paper have implications regarding the issue of the basic clause structure of Japanese. There have historically been two schools of thought concerning the syntactic status of the tense morphemes in Japanese. On the one hand, there are authors who argue that a verb stem and the tense morpheme immediately following it always form not just a phonological constituent but a morphosyntactic constituent as well (see Sells (1995) among others). This line of thinking is often referred to as the lexicalist hypothesis in the literature. On the other hand, there are authors who argue that a verb stem and the tense morpheme immediately following it do not necessarily form a morphosyntactic constituent (see Fukui & Sakai (2003) among others). This view is sometimes referred to as the non-lexicalist view in the literature. The theory that we will advance in this paper, according to which the structure shown in (3) above is possible, entails that, at least in some cases, the tense morphemes in Japanese are syntactically independent and take tenseless clauses as complements. Thus, if the view that we are going to advocate is correct, the lexicalist hypothesis needs to be abandoned.

2 RNR of mismatched verb forms?

We begin by examining the third type of analysis mentioned above. This analysis appears viable for RNR constructions like (1), which involve conjunction. The analysis, however, encounters a problem when it is applied to examples involving disjunction, such as (5).

- (5) Hanako ga yama e, mata wa Masao
 Hanako NOM mountain to or Masao
 ga kawa e itta.
 NOM river to GO-PAST
 ‘Hanako went to the mountain, or Masao
 went to the river.’

The pre-RNR structure posited for sentence (5) in this analysis is shown in (6). The problem is that sentence (6) is considerably unnatural as a sentence expressing simple disjunction of two propositions.

- (6) [Hanako ga yama e iki], mata wa
 [Hanako NOM mountain to GO-INF] or
 [Masao ga kawa e itta].
 [Masao NOM river to GO-PAST]

The sentence in (6) is acceptable as a sentence expressing something along the line of “Hanako habitu-

ally went to the mountain and Masao habitually went to the river, and on any given day, one of the two types of events took place,” but it does not express simple disjunction, which *can* be expressed by (5).

Our assertion that a sentence like (6) cannot express simple disjunction devoid of the implication of habituality is justified by the result of a questionnaire study we conducted using (7) as one of the experimental sentences. (The questionnaire results mentioned in this abstract come from several different questionnaire studies. The full paper will include more detailed information on each of them.)

- (7) ??[Seifu-gun ga byôin o
 [government forces NOM hospital ACC
 kûbaku shi], mata wa [hanran-gun ga
 air strike do-INF] or [rebel forces NOM
 byôin no sugu chikaku no buki-ko
 hospital GEN immediate vicinity GEN arsenal
 o bakuha shita] rashii.
 ACC explode do-PAST] it appears
 ‘It appears that either the government forces
 did an air strike on the hospital or the rebel
 forces exploded the arsenal in the immediate
 vicinity of the hospital.’
 <1, 4, 6, 4>

The four figures following the example sentence in (7) indicate the number of respondents who found the example perfect, slightly unnatural, considerably unnatural, and impossible, respectively, under the intended reading. The questionnaire result indicates that this sentence, which has the same structure as (6) but pragmatically disfavors habitual interpretation unlike (6), is considerably unnatural.

If we assume that (1) and (5) can be derived from (4) and (6) respectively through RNR, we predict incorrectly that sentences like (6) and (7) must be able to express simple disjunction, since (5) is capable of expressing simple disjunction. We therefore conclude that a sentence like (1) is not derived from a structure like (4).

3 RNR out of tensed phrases

Next, we will consider whether there are sentences that must be analyzed as involving RNR of a tensed verb out of coordinated tensed clauses, as depicted in (2). It turns out that there clearly are such sentences. (8) is one such sentence.

- (8) Hanako wa osoraku yama e, Masao wa
 Hanako TOP probably mountain to Masao TOP

osoraku kawa e itta.
probably river to GO-PAST

‘Hanako probably went to the mountain and Masao probably went to the river.’
<15, 0, 0, 0>

Since topic phrases like *Hanako wa* and *Masao wa* cannot appear inside a tenseless phrase (see Takubo (1987)), this sentence can only be analyzed as involving RNR of the tensed verb *itta* ‘GO-PAST’ out of two coordinated tensed clauses.

4 RNR out of tenseless phrases

Now we will examine whether there are sentences that are amenable only to the analysis depicted in (3). It will be our claim that there are two types of sentences that fall into that category. In both cases, it will be argued that any attempt to analyze the given examples in conformity with the lexicalist hypothesis would force us to make unnatural assumptions about the syntax of Japanese.

4.1 Cases of obligatory RNR

First, there are cases where adherence to the lexicalist hypothesis would force us to postulate a grammar rule whose sole function is to make some instances of RNR obligatory. Consider (9) and (10).

(9) [Kanari komaru ne],
[considerably have trouble-PRES won’t we]
[[fumoto de] [ame ga], [chôjô de] [yuki
[[base at] [rain NOM] [top at] [snow
ga] furu to].
NOM] fall-PRES if]

‘We will have a considerable amount of trouble, won’t we, if rain falls at the base of the mountain and snow falls at its top.’
<12, 4, 1, 0>

(10) [Watashi wa yama o orimasen],
[I TOP mountain ACC descend-POL.NEG]
[[fumoto de] [ame ga], [chôjô de] [yuki
[[base at] [rain NOM] [top at] [snow
ga] furu made wa].
NOM] fall-PRES at least until]

‘I will not descend from the mountain, at least until rain falls at the base of the mountain and snow falls at its top.’
<10, 5, 0, 2>

If we are to maintain the lexicalist hypothesis, (9) needs to be assumed to be derived from either (11a) or

(11b), and (10) needs to be assumed to be derived from either (12a) or (12b).

(11) a. ?? [Kanari komaru
[considerably have trouble-PRES
ne], [[fumoto de] [ame ga]
won’t we] [[base at] [rain NOM]
furu, [chôjô de] [yuki ga]
fall-PRES [top at] [snow NOM]
furu to].
fall-PRES if]
‘(Same as (9))’
<1, 8, 6, 2>

b. ?? [Kanari komaru
[considerably have trouble-PRES
ne], [[fumoto de] [ame ga]
won’t we] [[base at] [rain NOM]
furu to, [chôjô de] [yuki ga]
fall-PRES if [top at] [snow NOM]
furu to].
fall-PRES if]
‘(Same as (9))’

(12) a. ?? [Watashi wa yama o
[I TOP mountain ACC
orimasen], [[fumoto de]
descend-POL.NEG] [[base at]
[ame ga] furu, [chôjô de] [yuki
[rain NOM] fall-PRES [top at] [snow
ga] furu made wa].
NOM] fall-PRES at least until]
‘(Same as (10))’
<0, 7, 8, 2>

b. [Watashi wa yama o
[I TOP mountain ACC
orimasen], [[fumoto de]
descend-POL.NEG] [[base at]
[ame ga] furu made (wa),
[rain NOM] fall-PRES (at least) until
[chôjô de] [yuki ga] furu
[top at] [snow NOM] fall-PRES
made wa].
at least until]
‘(Same as (10))’

We can arguably discount the possibility that (11b) and (12b) might be the pre-RNR structure of (9) and (10) respectively, since there is a difference in meaning between (9) and (11b) and between (10) and (12b)

and it is difficult to see how those differences could be induced by right-node raising.

Thus, on the assumption that the lexicalist hypothesis is correct, (11a) and (12a) must be the pre-RNR structure of (9) and (10) respectively. This means that some grammar rule has to be postulated that makes the RNR involved here obligatory, since (11a) and (12a) are at best awkward, as shown by the questionnaire result. Making the arguably plausible assumption that (8) above involves coordination of MoodPs whereas (11a) and (12a) involve coordination of tensed VPs, we could postulate a grammar rule like (13).

- (13) Tensed VPs (as opposed to MoodPs) cannot be coordinated without using a coordinator, unless the tensed verbs are right-node-raised.

Such a rule would make application of RNR obligatory only in structures like (11a) and (12a) and thus correctly capture the facts that we have seen so far. However, considering that no other languages appear to have comparable rules that make application of RNR obligatory in particular syntactic contexts, the fact that we are forced to postulate such a rule arguably suggests that there is something wrong with this line of analysis.

In contrast, if we abandon the lexicalist hypothesis and assume that sentences (9) and (10) are derived from pre-RNR structures involving coordination of tenseless clauses as in (3), we need not postulate a special grammar rule that makes RNR obligatory in particular syntactic contexts. All we need to do to capture the relevant facts is to postulate a simple rule like (14), which rules out (11a) and (12a) without saying anything about right-node raising.

- (14) Tensed VPs (as opposed to MoodPs) cannot be coordinated without using a coordinator.

Like (11a) and (12a), the pre-RNR structures postulated for (9) and (10) in this analysis cannot be used as surface forms either, but there is no need to say anything special to rule out those structures. Since verb stems like *fur-* ‘to fall’ are bound morphemes, the pre-RNR structures that are postulated in this second account are automatically ruled out; in these pre-RNR structures, the first of the two coordinated tenseless clauses ends with a verb stem that is not immediately followed by a tense morpheme and hence is unpronounceable.

4.2 Cases of apparently restructuring-inducing RNR

Another type of situation where the lexicalist hypothesis appears to force us to adopt an unnatural assumption is exemplified by sentence (15).

- (15) Mai-asa chan to, [jûgo-fun gurai
every morning regularly [about 15 minutes
jogingu o suru ka], chôshoku mae ni
jogging ACC do-PRES or] before breakfast
udetatefuse, chôshoku go ni sukuwatto o
pushup after breakfast squat ACC
shita.
do-PAST

‘Every morning, I regularly did either one of the following two things. Option 1 was to jog for about 15 minutes. Option 2 was to do pushups before breakfast and to do squats after breakfast.’

<6, 3, 0, 2>

If we are to adhere to the lexicalist hypothesis, it has to be assumed that this sentence is derived from sentence (16) by right-node-raising the accusative case marker *o* and the tensed verb *shita*.

- (16)?*Mai-asa chan to, [jûgo-fun gurai
every morning regularly [about 15 minutes
jogingu o suru ka], chôshoku mae ni
jogging ACC do-PRES or] before breakfast
udetatefuse o shita, chôshoku go ni
pushup ACC do-PAST after breakfast
sukuwatto o shita.
squat ACC do-PAST
‘(Same as (15))’
<0, 2, 3, 6>

This assumption, however, is problematic. As shown by the questionnaire result, sentence (16) is considerably unnatural under the intended interpretation. The only meaning that sentence (16) can express appears to be something along the line of “Every morning, I regularly either jogged for about 15 minutes or did pushups before breakfast, and I did squats after breakfast.” In other words, whereas the structure of the verb phrase in (15) is (17), the structure of the verb phrase in (16) seems to be (18).

- (17) [VP1 [VP2 VP3]]

- (18) [[VP1 VP2] VP3]

Thus, (16) cannot be the pre-RNR structure of (15) unless it is assumed that RNR can induce restructuring of the kind that can transform (18) into (17).

In contrast, such a problematic assumption is not forced on us if the analysis depicted in (3) is applied to (15). On such an account, sentence (15) can be generated as follows.

- (19) [Mai-asa chantō
 [[jûgo-fun gurai jōgingu o suru ka]
 [[chōshoku mae ni udetatefuse o s-]
 [chōshoku go ni sukuwatto o s-]]]-ta]
 ↓
 [Mai-asa chantō
 [[jûgo-fun gurai jōgingu o suru ka]
 [[chōshoku mae ni udetatefuse]
 [chōshoku go ni sukuwatto o s-]]]-ta]

The bound morpheme *s-* is the verb stem of the verb *suru* ‘to do’, and *-ta* is the past tense morpheme. In this analysis, the complement of the past tense morpheme has a structure like (17), where VP1, which ends with *ka* ‘or’, is headed by the present tense form of a verb (*suru*), whereas VP2 and VP3 are both headed by a verb stem (*s-*). What is right-node-raised is the sequence made up of the accusative case marker *o* and the verb stem *s-*. After the application of RNR, the verb stem and the tense morpheme are combined to become the phonological word *shita*.

The following example, which is modelled after an example discussed in Kuroda (2003), shows that the process that we have claimed takes place inside the complement of a tense morpheme can take place inside the complement of the causative morpheme (*s*)*ase*. This observation adds to the plausibility of the proposed account.

- (20) Hanako wa Masao ni, [sōji o
 Hanako TOP Masao DAT [cleaning ACC
 shite fuyōhin o subete
 do-GER unnecessary items ACC all
 shobun suru ka], heya-dai o kyō jū,
 get rid of-PRES or] rent ACC within today
 chūshajō-dai o kongetsu chū ni
 parking space fee ACC withing this month DAT
 zengaku shiharawaseru koto ni
 the entire amount pay-CAUS-PRES NML DAT
 shita.
 do-PAST
 ‘Hanako decided to make Masao do one of two things, where option 1 was to clean the place and get rid of all the unnecessary items, and option 2 was to pay up the rent before the end of the day and the parking space fee before the end of the month.’

<10, 4, 1, 0>

In this sentence, the causative morpheme *ase* (which is embedded in the phonological word *shiharawaseru*) takes a complement whose pre-RNR structure has the form shown in (17), where VP1 is a verb phrase followed by *ka* ‘or’ (i.e. the bracketed expression in (20)), and VP2 and VP3 are both tenseless verb phrases ending in the verb stem *shiharaw-*. The verb stem is right-node-raised out of VP2 and VP3, and fuses with the causative morpheme and the tense morpheme to become the phonological word *shiharawaseru*. There is arguably no other way to analyze the structure of (20).

Thus, we have two arguments for the non-lexicalist analysis of (15). Unlike the lexicalist analysis, it does not require us to assume that RNR can induce restructuring of the kind that transforms (18) into (17). Moreover, there is an independent reason to believe that the syntactic structure that it postulates is allowed by the grammar.

5 Summary

We have examined the fine structure of clausal right-node raising constructions in Japanese, and argued that there are sentences in which a tensed verb is right-node-raised out of coordinated tensed clauses as well as sentences in which a verb stem is right-node-raised out of coordinated tenseless phrases. In the latter case, the tense morpheme has to be assumed to take a tenseless complement clause, and we have noted that the existence of such a structure contradicts the so-called lexicalist hypothesis, according to which a verb stem and the tense morpheme immediately following it always form a morphosyntactic constituent.

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