

Light Verb Constructions in Japanese and Functional Uncertainty

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1. Introduction

The main concerns of this paper are the investigation of syntactic and semantic behaviors of adjuncts in the Japanese light verb constructions, in particular apparent transfer (displacement) of adjuncts (Matsumoto (1996)), and its implication for the device of functional uncertainty (Kaplan and Zaenen (1989), Dalrymple (1993) etc.) in Lexical-Functional Grammar.

Matsumoto claims that there are cases in which adjuncts of a verbal noun have apparently been transferred, appearing in the light verb *suru* 'do' construction without genitive case marking. He gives two relevant examples of an adjunct transferred from a verbal noun; one is the *ni*-marked purpose clause, as in (1), the other is the adverb of result, as in (2).

(1) Jon-wa	[PRO	zisin-no	higai-o	tyoosa si-ni]
John-Top		earthquake-Gen	damage-Acc	research-do-Pur
tyookikan	tobee-o	suru	koto-ni	sita.
for.a.long.time	visit USA-Acc	do	Comp-Dat	decided

'John decided to go to the US for a long time in order to survey the damage from the earthquake.'

(2) Jon-wa	[komakaku] sono kami-no	setudan-o	sita.
John-Top	finely the paper-Gen	cutting-Acc	did

'John cut the paper to very small pieces.'

(Matsumoto (1996: 115-116))

This paper is organized as follows: in section 2 I argue that arguments can be transferred. In section 3, I argue that adjuncts cannot be transferred, pace Matsumoto. Section 4 reexamines the *ni*-marked

purpose clause, and section 5 the adverb of result. By the reexamination of the two examples supposedly involving adjunct transfer, as given in (1) and (2), I will again argue that in the light verb construction only an argument of the verbal noun can appear outside the projection of the verbal noun. In section 6 I present an alternative formal analysis which overcomes the problems with Matsumoto's theory.

2. Transfer of Arguments

In this section I go over one of the characteristic properties of the light verb construction in Japanese; An argument of a verbal noun can occur either inside or outside the projection of the verbal noun, as shown in (3).

- (3) a. Hyakkaten-ga kookuubin-de kankoku-kara matutake-o
 department.store-Nom airmail-by Korea-from matutake-Acc
 [NP[VN yunyuu]]-sita.
 import-did
 'That department store imported matutake mushrooms from
 Korea by airmail.'
- (3) b. Hyakkaten-ga kookuubin-de kankoku-kara [NP matutake-
 department.store-Nom airmail-by Korea-from matutake-
 no [VN yunyuu]]-o sita.
 Gen import-Acc did
- (3) c. Hyakkaten-ga kookuubin-de [NP kankoku-kara-no
 department.store-Nom airmail-by Korea-from-Gen
 matutake-no [VN yunyuu]]-o sita.
 matutake-Gen import-Acc did
- (3) d. Hyakkaten-ga [NP kookuubin-de-no kankoku-kara-no
 department.store-Nom airmail-by-Gen Korea-from-Gen
 matutake-no [VN yunyuu]]-o sita.
 matutake-Gen import-Acc did

Here all of the nominal elements are arguments of the verbal noun yunyuu 'import'. It should be noted here that the semantic content does not change in sentences (3a-d).

Grimshaw and Mester (1988) first try to give an account of the syntactic phenomenon by introducing a mechanism peculiar to the light verb construction in Japanese called argument transfer in order to satisfy the locality requirement for theta-marking (cf. Chomsky (1981)). Take (4) as an instance.

- (4) Mearii-ga Jon-ni /-e [toti-no zyooto]-o sita.

Mary-Nom John-to/-to land-gen giving-acc did

'Mary gave a piece of land to John'

The lexical forms of the light verb suru 'do' and the verbal noun zyooto 'giving' in (4) would be those given in (5). (6a-c) are possible results of argument transfer, which correspond to sentences (7a-c), respectively.

(5) suru 'do' () <acc>

zyooto 'giving' (agent, goal, theme)

(6) a. zyooto (theme) + suru (agent, goal) <acc> -> (7a)

(6) b. zyooto (goal, theme) + suru (agent) <acc> -> (7b)

(6) c. zyooto () + suru (agent, goal, theme) <acc> -> (7c)

(7) a. Mearii-ga Jon-ni/-e [toti-no zyooto]-o sita.

Mary-Nom John-to/-to land-Gen giving-Acc did

(7) b. Mearii-ga [Jon-e-no toti-no zyooto]-o sita.

Mary-Nom John-to/-to land-Gen giving-Acc did

(7) c. Mearii-ga Jon-ni/-e toti-o [zyooto]-sita.

Mary-Nom John-to/-to land-Acc giving-did

Grimshaw and Mester claim that argument transfer is possible only for a verb which has an incomplete argument structure. Their theory predicts that only arguments are transferable. This prediction is borne out by the fact that the transfer of adjuncts is impossible, which I will show in the subsequent sections.

Matsumoto rejects Grimshaw and Mester's analysis and instead argues that in light verb constructions some adjuncts of the verbal noun (as shown in (1) and (2)) as well as arguments can occur outside the projection of the verbal noun. It will be my contention that his claim is not correct.

3. (Non-)transfer of Adjuncts

3.1. Expressions that are clearly adjuncts

In this subsection I will show that things that are clearly adjuncts cannot be transferred. Let us first consider (8a) and (8b). In (8a) the adjunct tyookikan 'for a long time' is marked with the genitive marker no, and stays within the projection of the verbal noun, hence the adjunct is a VN-adjunct. Note that in the translation the angle brackets indicate which portion of the sentence is being modified by the adjunct (shown in square brackets). In cases like this, the main verb can be replaced by light verbs other than suru 'do'.¹ On the other hand, in (8b) the adjunct tyookikan is not marked with the genitive case marker, and it is outside the NP, which means that it is no longer an adjunct of the verbal noun. Note that in (8b) the adjunct tyookikan modifies the main verb sita / kokoromita / nozonda, but does not modify only the verbal noun tobee.

(8) a. [tyookikan-no] tobee-o sita / kokoromita / nozonda
 for.a.long.time-Gen visit.USA-Acc did / tried / hoped
 (Lit.) 'did / tried to / hoped to <visit USA> [for a long time]'

(8) b. [Tyookikan] watasi-wa tobee-o sita / kokoromita /
 for.a.long.time I-Top visit.USA-Acc did / tried /
 nozonda.
 hoped
 (Lit.) 'I <visited / tried to visit / hoped to visit USA> [for a long time].'

The contrast between (8a) and (8b) demonstrates that in light verb constructions an adjunct of a verbal noun can no longer modify only the verbal noun if it is outside the NP.

Next, let us consider (9). The adjunct clause in (9a) is outside the NP. With regard to adjunct interpretation, (9a) and (9b) do not have the same semantic content. In (9a) 'John thinks that continuing / deciding / trying hoping monetary aid is bad.' By contrast, in (9b) 'John thinks that monetary aid itself is bad.' The difference of meanings indicates that in (9a) the adjunct clause, which is outside the projection of the verbal noun, must modify the main verb, whereas in (9b) the adjunct, which remains within the projection of the verbal noun, necessarily modifies only the verbal noun. The same effect exhibits itself in (10a) and (10b). In (10a) 'When Taro tried to meet a spy secretly, Taro wore his everyday clothes', hence the adjunct modifies the main verb kokoromita 'tried'. In (10b), on the other hand, 'Taro tried to meet a spy secretly, where (=at the meeting) he would wear his everyday clothes', hence the adjunct modifies the verbal noun mikkai 'secret meeting'.

(9)a. [Yokunai-koto-to	siri-nagara]	Jon-wa	suuzan-ni
bad-thing-Comp	know-though	John-Top	Suzan-Dat
sikin-no	enzyo-o	tuzuketa	/ ketteesita
money-Gen	help-Acc	continued	/ decided
/ kokoromita	/ nozonda.		
/ tried	/ hoped		

'John <continued / decided / tried / hoped / to give Suzan monetary aid>, [though he knew it was a bad thing].'

(Note that John thinks that continuing / deciding / trying / hoping monetary aid is bad.)

(9)b. Jon-wa	suuzan-ni	[yokunai-koto-to	siri-nagara-no]
John-Top	Suzan-Dat	bad-thing-Comp	know-though-Gen
sikin-no	enzyo-o	tuzuketa	/ ketteisita
money-Gen	aid-Acc	continued	/ decide
/ kokoromita	/ nozonda.		
/ tried	/ hoped		

'John continued / decided / tried / hoped to give Susan bad <monetary aid>, [though he knew it was a bad thing].'

(Note that John thinks that monetary aid itself is bad.)

(10) a. [Hudangi-no-mama]	Taroo-wa	supai-to-no
[casual wear-Gen-with]	Taro-Top	spy-with-Gen
mikkai-o	kokoromita	/ ketteisita.
secret.meeting-Acc	tried	/ decided

'Taro, [wearing his everyday clothes], <tried / decided to meet secretly with a spy>.'

(Note that Taro wore his everyday clothes when he tried / decided to meet a spy secretly.)

(10) b.	Taroo-wa	supai-to	[hudangi-no-mama-no]	mikkai-
	Taro-Top	spy-with	casual wear-Gen-with-Gen	secret meeting-
	o	kokoromita	/ ketteisita.	
	Acc	tried	/ decided	

'Taro tried / decided to <meet secretly with a spy> [wearing his everyday-clothes].'

(Note that Taro tried / decided to meet a spy secretly, where (= at the meeting) he could wear his everyday clothes.)

Next, (11) is a case of the adjunct clause which cannot be marked with genitive marker no. I assume it is outside the NP. The adjunct interpretation of (11) suggests that the adjunct clause cannot modify only the verbal noun, but modify the verb.

(11) [Yokunai	koto-to	wakatte-ita-nimokakawarazu]	Taroo-wa
not.good	thing-Comp	understand-be-Past-though	Taro-Top
Hanako-ni	sikin-no	enzyo-o tuzuketa	/ kokoromita / kettesita.
Hanako-Dat	money-Gen	aid-Acc continued	/ attempted / decided

'Taro <continued / attempted / decided to give Hanako monetary aid>, [though he knows it bad].' (it = continuing / trying / deciding to give her monetary aid)

To sum up, an unambiguous adjunct necessarily modifies the verb (and the verbal noun as well) if it occurs outside the projection of the verbal noun, while it modifies only the verbal noun if it stays within the NP.

3.2. VN-adjuncts vs. VP-arguments

In this subsection I would like to compare VN-adjuncts with VN-arguments, and point out the existence of elements which are seemingly adjuncts, but are in fact optional arguments.

3.2.1. Optional arguments

I will exploit the notion optional arguments, which in a word are arguments that are not necessarily realized in syntax. For instance, consider (12) in which round bracketed elements are not necessarily syntactically expressed, but are semantically necessary for the logical well-formedness

of the sentences. (cf. default arguments by Pustejovski (1995))

(12) a. Pat will talk (to Sandy).

(12) b. Lee has eaten (lunch).

(12) c. The French were defeated (by the Germans).

(12) d. We bet (Lou) five dollars (that the 49ers would win).

(Pollard and Sag (1987:132))

Take 'eat' in (12b) as an illustration. The verb will have an argument structure like (13), in which the theme argument is an optional one.

(13) 'eat' <agent, (theme)>

4. Ni-marked Purpose Clauses

I now would like to argue that the ni-marked purpose clause repeated here in (14) is in fact a VN-optional argument, not a VN-adjunct as Matsumoto claims.

(14)=
(1) Jon-wa [PRO zisin-no higai-o tyoosa si-ni]
John-Top earthquake-Gen damage-Acc research-do-Pur
tyookikan tobee-o suru koto-ni sita.
for.a.long.time visit USA-Acc do Comp-Dat decided
'John decided to go to the US for a long time in order to survey the damage from the earthquake.'

4.1. Analysis

4.1.1. Syntactic and semantic diagnostics

I will use four diagnostics in this paper to distinguish adjuncts from arguments; Constancy of semantic contribution, Order dependence of content, Iterability, and Causative test. Let us look at below what these are like.

Pollard and Sag (1987) provide several diagnostic tests to make the distinction between adjuncts and arguments (complements in their terms). I would like to take some of them shown in (15), (17) and (20), which I think will serve our purpose.

(15) *Constancy of semantic contribution:*

In general, a given adjunct can co-occur with a relatively broad range of heads while seeming to make a more-or-less uniform contribution to semantic content across that range. A given optional complement, by contrast, is typically limited in its distribution to co-occurrence with a small (and often semantically restricted) class of heads (possibly even a single item); in addition, the semantic contribution of the complement is idiosyncratically dependent upon the head.

(Pollard and Sag (1987:136))

They give relevant examples as (16) below. In (16a), for example, the PP is a locative adjunct. It is appropriate with any head that describes a kind of situation for which the notion of location is relevant, and its locative semantic contribution seems independent of the head. In (16b), by contrast, where the PP is (obligatory or optionally) subcategorized for, the only semantically contrast feature of the PP is that it always describes the participant in one of the roles appropriate to the relation described by the head verb; but precisely which role is involved varies from one verb to the next.

(16) a. Kim camps / jogs / mediates / on the hill.

(16) b. Kim depends / relies on Sandy.

(17) *Order dependence of content:*

The contribution of adjuncts to semantic content can depend upon their relative order in a way which does not apply to optional complements.

(Pollard and Sag (1987:135))

With regard to (17), they give relevant examples, as given in (18) and (19). In (18) if one changes the order of the two adjuncts with respect to each other, then the semantic content will change. On the other hand, in (19) if one changes the order of the optional arguments, the semantic content will not change.

(18) a. a self-proclaimed alleged communist

(18) b. an alleged self-proclaimed communist

(19) a. Kim complained about the neighbors to the landlord.

(19) b. Kim complained to the landlord about the neighbors.

(20) *Iterability:*

In general, two or more instances of the same adjunct type can combine with the same head (21a), but this is impossible for arguments (21b).

(21) a. Dana went to Chicago without going to the conference without feeling guilty.

(21) b. *The authorities blamed the arson on the vegetarians on the Luddites.

Let us now consider cases in Japanese. In (22) below the verbal noun ryakudatu 'plunder' will have an argument structure; <agent, (theme), (source)>. The theme argument hooseki-no 'jewelry-Gen' and the source argument Suuzan-kara 'Suzan-from' are optional arguments, which do not have to be syntactically realized.

(22) Mearii-ga Suuzan-kara hooseki-no ryakudatu-o sita.

Meary-Nom Suzan-Source jewelry-Gen plunder-Acc did

'Mary stole the jewelry from Suzan.'

Other cases involving optional arguments include restructuring / predicate raising (taken from Miyagawa (1986:273)), as shown in (23). The purpose clause hon-o kai-ni 'to buy a book' plays the role of an argument of the matrix verb itta 'went'. The purpose clause is subcategorized for by the matrix verb itta.

(23) [Taroo-ga [PRO hon-o kai-ni] itta]

Taro-Nom book-Acc buy-Pur went

'Taro went to buy a book.'

Another diagnostic test employing the causative construction is helpful to distinguish arguments from adjuncts. (S.Yatabe p.c.,(1998)) In the construction, an argument preceding the causer argument is interpreted with respect to 'the caused event', while an adjunct preceding the causer argument with respect to 'the causing event'. Consider (24) and (25). In (24a) hooseki-o 'jewelry(Acc)' can be a semantic argument of the base verb nusumu 'steal'. In (24b) Hanako-kara 'from Hanako' can also be a semantic argument of nusumu.

(24) a. [Hooseki-o] Taroo-wa Akira-ni Hanako-kara nusum-ase-ta.

jewelry-Acc Taro-Top Akira-Dat Hanako-Source steal-cause-Past

'Taro made Akira steal jewelry from Hanako.'

(24) b. [Hanako-kara] Taroo-wa Akira-ni hooseki-o nusum-ase-ta

Hanako-Source Taro-Top Akira-Dat jewelry-Acc steal-cause-Past

'Taro made Akira steal jewelry from Hanako.'

On the other hand, in (25) the adjunct clause nan-no setumee-mo se-zuni 'without giving any explanation to her' is interpreted with respect to the causing event, i.e., the causative suffix sase 'cause'.

(25) [PRO nan-no setumee-mo se-zuni] Taroo-wa Hanako-ni

what-Gen explanation-even do-without Taro-Top Hanako-Dat

amerika-e ik-ase-ta.

USA-to go-cause-Past

'Taro made Hanako visit the US without giving any explanation to her.'

4.1.2. Diagnosis

Matsumoto notes that the verbal noun tobee 'visit USA' in (14)(=(1)) cannot be replaced by nani 'what', which bears no argument structure, as shown in (26) below, and claims that this fact suggests that the ni-marked purpose clause is not an adjunct of sita 'decided'. However, it should be noted that Matsumoto's observation does not show that the ni-marked purpose clause is an adjunct of the verbal noun; the ni-marked purpose clause may be an argument of the verbal noun.

(26) ?? Jon-wa [PRO zisin-no higai-o tyoosa-si-ni]
 John-TOP earthquake-Gen damage-Acc research-do-Pur
 nani-o suru koto-ni si-masi-ta-ka.
 what-Acc do Comp-Dat decide-Pol-Past-Q

'What did John decided to do for a long time in order to survey the damage from the earthquake?' (intended)

Now let us use the causative test to determine whether the purpose clause is indeed an adjunct. In (27) the purpose clause is interpreted with respect to the caused event. We, then, conclude that the ni-marked purpose clause is an argument, to say exactly a VN-optional argument.

(27) [PRO zisin-no higai-o tyoosa-si-ni Taroo-wa
 earthquake-Gen damage-Acc research-do-Pur Taro-Top
 Jon-ni tobbee-o-sase-ta.
 John-Dat visit.USA-Acc-cause-Past

'Taro made John visit the US in order for her to do survey the damage from the earthquake.' (cf. (24))

Another piece of evidence that supports our claim comes from the iterability diagnosis, which we have seen in (20). If zisin-no higai-o tyoosa-si-ni 'in order to survey the damage from the earthquake' were an adjunct, (28a) would be grammatical. However, the sentence is bad. By contrast, (28b) in which the purpose clause is marked with -tame, is good. (28) thus shows that ni-marked purpose clauses are arguments, while tame-marked purpose clauses are adjuncts.

(28) a. ??Jon-wa [zisin-no higai-o
 John-Top earthquake-Gen damage-Acc
 tyoosa-si-ni] [eigo-o migaki-ni]
 research-do-Pur English-Acc improve-Pur
 tobbee-o suru koto-ni sita
 visit USA-Acc do Comp-Dat did.

'John went to the US in order to survey the damage from the earthquake, to improve his English.'

(28) b. Jon-wa [zisin-no higai-o tyoosa
 John-Top earthquake-Gen damage-Acc research
 suru-tame] [eigo-o migaku-tame] tobbee-o
 do-Pur English-Acc improve-Pur visit USA-Acc
 suru koto-ni sita.
 do Comp-Dta did

'John went to the US in order to survy the damage from the earthquake, to improve his English.'

5. Resultative Adverbs

Let us move on to the other example, the resultative adverb. I will repeat the example here as (29). I will argue that the resultative adverb komakaku 'finely' is not a VN-adjunct, but a VN-optional argument just like the ni- marked purpose clause that we have seen in the previous section.

(29) = (2) Jon-wa [komakaku] sono kami-no setudan-o sita.
John-Top finely the paper-Gen cutting-Acc did
'John cut the paper to very small pieces.'

5.1. Analysis

As Matsumoto observes, if the verbal noun is replaced by nani 'what', then the adverb komakaku 'finely' in (29) cannot be used at least in the result reading. This may be the case. The result of the test in (30), however, does not mean that an adjunct clause has been transferred from the verbal noun as he claims. It only suggests that komakaku 'finely' is not a dependent of the main verb sita 'did'.

(30) ??Jon-wa [komakaku] nani-o sita-ka.
John-Top finely what-Acc did-Q
'What did John do finely?'

Consider (31). The result of the causative test shows the resultative adverb must be an argument.

(31) [komakaku] Biru-wa Jon-ni sono kami-no setudan-o s-asete.
finely Bill-Top John-Dat the paper-Gen cut-Acc do-cause
'Bill made John cut the paper finely.' (cf. (24))

Further evidence that supports our claim comes from the order dependence of content diagnosis, which we have seen in (17). If komakaku 'finely' were an adjunct, the semantic content would be expected to change in (32). However, the meanings of (a) and (b) sentences are the same.

(32) a. Jon-wa [komakaku] [bukiyooni] sono kami-no setudan-o
John-Top finely awkwardly the paper-Gen cut-Acc
sita.
did
'John awkwardly cut the paper to very small pieces.'

(32) b. Jon-wa [bukiyooni] [komakaku] sono kami-no setudan-o
John-Top awkwardly finely the paper-Gen cut-Acc
sita.

did

'John awkwardly cut the paper to very small pieces.' (= a)

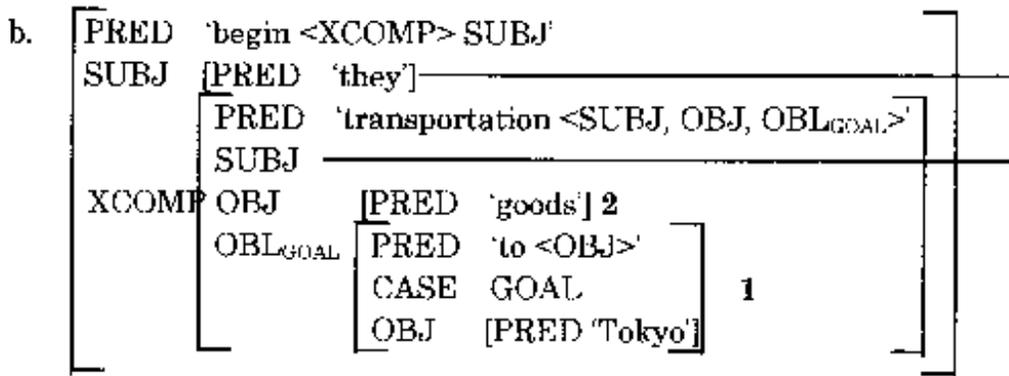
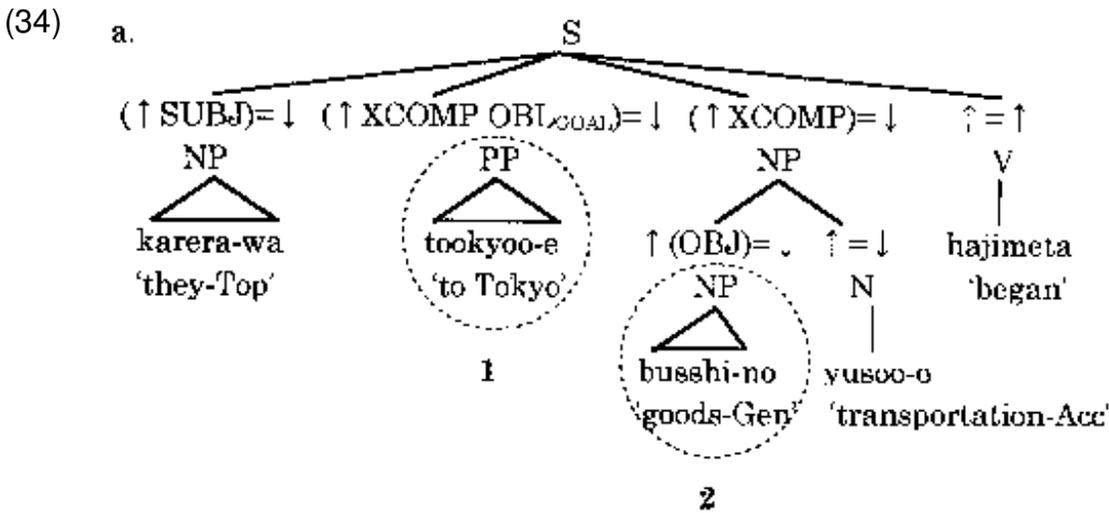
Based on our analysis developed in this subsection, we conclude that resultative adverbs such as komakaku 'finely' or konagona-ni 'pieces-to' in light verb constructions are VN-optional arguments, and that transfer of adjuncts is never allowed, as I have claimed.

6. Theoretical Implications

Within the framework of LFG, Matsumoto proposes that the phrase-structure rules such as (33a) and (33b) employing the device of functional uncertainty should handle the light verb construction in Japanese. (33a) generates a constituent structure in which arguments and adjuncts of a verbal noun occur immediately dominated by an S. (33b) allows the alternative possibility of the arguments and adjuncts of a verbal noun appearing inside an NP. As an illustration, I show in (34a) and (34b) the c-structure and f-structure proposed in Matsumoto.

- (33) a. $S \rightarrow XP^*$ $\{V, A\}$
 $(\uparrow XCOMP^* GF) = \downarrow$ $\hat{\ } = \downarrow$
- b. $NP \rightarrow XP^*$ N
 $(\uparrow GF) = \downarrow$ $\uparrow = \downarrow$

(Matsumoto 1996:135)



Note, however, that the postulation of adjunct transfer cannot be maintained any more, as we have discussed in the previous sections.

There are of course other ways to handle the fact that arguments can be transferred, while adjuncts cannot. For example, we could use Argument Fusion (Butt (1995)) or Argument Attraction (Hinrichs and Nakazawa (1990)). I have no arguments at present for choosing one of these over another. (See relevant discussions in Butt (1998), Andrews and Manning (1999)) So I here adopt an XCOMP analysis in order to account for the fact. I add minimal modifications to Matsumoto's analysis in order to provide an account of the data presented in this paper. I propose to replace the phrase-structure rules in (33) by the ones given in (35).

- (35) a. $S \rightarrow XP^* \quad \{V, A\}$
 $(\uparrow XCOMP^*GF-ADJ) = \downarrow \quad \uparrow = \downarrow$
 or
 $(\uparrow (X)ADJ) = \downarrow$
- b. $NP \rightarrow XP^* \quad N \quad (= (33b))$
 $(\uparrow GF) = \downarrow \quad \uparrow = \downarrow$

The revised rule (35a) says that either the XP is XCOMP*GF (except ADJUNCT) or it is an element of the ADJUNCT set. Thus, in light verb constructions only arguments of an XCOMP can be allowed

two alternative positions, i.e., inside / outside a verbal noun. VP-adjuncts and V-adjuncts are handled by the rule (35a), while VN-adjuncts by (35b)=(33b)).

7. Conclusion

I have reexamined the two crucial examples supposedly involving the transfer of adjuncts. It has been found that in the light verb construction *ni*-marked purpose clauses such as *tyoosa-si-ni* 'research-do-Pur', and resultative adverbs such as *komakaku* 'finely' are both VP-optional arguments. In Japanese light verb constructions, an adjunct of a verbal noun cannot modify only the verbal noun if it is outside the projection of the verbal noun; in other words, adjuncts of a verbal noun cannot appear outside the NP, whereas arguments of a verbal noun can. I have also argued how the present analysis is incorporated into the phrase-structure rules that can give a satisfactory account of Japanese light verb constructions.

Notes

1. In this paper I follow Matsumoto's (1996) claim that all raising / control verbs exhibit the crucial properties of a light verb in Japanese. In this paper, I will use the term light verbs to refer to control verbs. Light verbs other than *suru* 'do' include *wasureru* 'forget', *oeru* 'finish', *kuwadateru* / *kokoromiru* 'try', *kangaeru* 'think', *nozomu* 'desire', *negau* 'wish', *mezasu* 'aim at', *dekiru* 'can do', *meeziru* 'order', *motomeru* 'ask', *yurusu* 'allow', *mitomeru* 'permit', *keekaku-suru* 'plan', *kettee-suru* 'decide', *kiboo-suru* 'hope', etc. ([Back](#))

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