

The Implausibility of LF-Incorporation in Japanese Light Verb Constructions

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1 Introduction

Consider the following three sentences:

- (1) a. John-ga nihongo-o benkyoo suru.
John-Nom Japanese-Acc study do
'John studies Japanese.'
- b. John-ga nihongo-no benkyoo-o suru.
John-Nom Japanese-Gen study-Acc do
'John studies Japanese.'
- c. ??John-ga nihongo-o benkyoo-o suru.
John-Nom Japanese-Acc study-Acc do
'John studies Japanese.'

As is obvious from the English equivalents, the three examples in (1) denote the same meaning. The difference in the above three sentences is the case-marking patterns. In example (1a), there is no accusative case *-o* on the verbal noun *benkyoo* 'study', while the accusative case is on *nihongo* 'Japanese'. In example (1b), the accusative case is on the verbal noun, but *nihongo* 'Japanese' is genitive-case marked. In (1c), both *nihongo* 'Japanese' and *benkyoo* 'study' are accusative-case marked. The prevailing view in the literature is that the verbal noun *benkyoo* in example (1a) is incorporated into the verb *su* 'do' (Kageyama 1977, 1991, 1993), or that the dummy verb *su* is inserted between the verbal noun and tense-marker (*ru*-present/*ta*-past) to form a prosodic word (Takahashi 2000). In either case, there is no attempt to explain how the accusative case is obtained on the verbal noun as in (1b) and (1c)¹, despite the fact that this phenomenon exists, as demonstrated by these examples. Notice that the acceptability of (1c) is a bit degraded when there are two accusative cases. In the literature, the verb *su* 'do' in examples (1b) and (1c) is called a light verb, which does not have semantic and thematic contents. In addition, a 'verbal noun + accusative case *-o* + *su*' construction is called a light verb construction (Dubinsky 1994, 1997; Grimshaw and Mester 1988; Kageyama 1993; Miyagawa 1989; Saito and Hoshi 200; Tsu-

¹In this paper, I will not discuss example (1a).

jimura 1990, among others). If the light verb *su* does not have semantic and thematic contents, how can sentences (1b) and (1c) obtain their meaning? Saito and Hoshi (2000) claim that the verbal noun is a theta-assigning noun, and that the verbal noun is incorporated into the light verb *su* at LF for the purpose of discharging the relevant thematic roles to the light verb *su*. Thus, the semantic and thematic contents in the light verb construction are determined via LF-incorporation.

However, I will argue that there is no LF-incorporation in Japanese light verb constructions. Rather, I will argue that the verbal noun is a verb, not a noun, and that the light verb *su* is a regular verb that has Agent and Theme theta-roles (Miyamoto 1999; Terada 1990; Uchida and Nakayama 1993, among others). In other words, a verbal noun and the verb *su* are independent theta-role assigners, and they never form a complex predicate, contra Saito and Hoshi (op. cit.).

This paper is structured as follows: In section 2, I will review Saito and Hoshi's LF-incorporation. In section 3, I will point out some problems in the LF-incorporation analysis of the Japanese light verb construction. In section 4, I propose that the verbal noun and the verb *su* are independent theta-role assigners. In section 5, I conclude this paper with some consequences of my analysis.

2 LF-Incorporation

According to Saito and Hoshi (2000), verbal nouns are categorically nouns, but they possess the ability to assign theta-roles. In addition, the verb *su* 'do' does not have semantic and thematic contents. To provide the verb *su* with semantic and thematic contents, Saito and Hoshi propose that the theta-role-assigning noun (i.e., verbal noun) is incorporated into the light verb *su* at LF. This idea is rooted in a proposal by Hale and Keyser (1993), Chomsky (1995), and Larson (1988), among many others, that a verb is a [*v* + V] complex predicate. Formation of this complex predicate is accomplished by incorporation of a big V into the light verb *v*. Saito and Hoshi equate a [*v* + V] complex predicate with the Japanese light verb construction. That is, VN and the light verb *su* form a complex predicate [VN + *su*] at LF for the purpose of theta-role discharge. There are two types of LF-incorporation:

- (2) a. John-ga [NP nihongo-no benkyoo]-o suru.²
 John-Nom Japanese-Gen study-Acc do
 'John studies Japanese.'

²The categorial status NP in (2a) and (2b) is from Saito and Hoshi.

- b. ??John-ga nihongo-o [NP benkyoo]-o suru.
 John-Nom Japanese-Acc study-Acc do
 ‘John studies Japanese.’

In (2a), the verbal noun *benkyoo* ‘study’ first discharges its Theme role to *nihongo* ‘Japanese’ within the NP, and is then incorporated into the light verb *su* at LF to discharge the Agent role. On the other hand, in (2b), there is no theta-role discharge within the NP. Rather, the verbal noun *benkyoo* ‘study’ is incorporated into the light verb *su* ‘do’ at LF, and then the relevant theta-roles (Agent and Theme) are discharged at LF (Saito and Hoshi 2000:268). Both (3a) and (3b) are LF-representations of (2a) and (2b), respectively.

- (3) a. John-ga [NP nihongo-no t_i]-o [benkyoo_i + suru].
 b. ??John-ga nihongo-o [NP t_i]-o [benkyoo_i + suru].

Now, how can the accusative case on VN be obtained? In addition, why is the acceptability of (3b) a bit degraded?

According to Saito and Hoshi, the accusative case on VN is obtained at the time of LF-incorporation. In other words, the accusative case is licensed at LF (Saito and Hoshi 2000: 272, 289 note 10). Regarding the degraded acceptability, Saito and Hoshi bring up the double o-constraint:

- (4) ‘A single sentence cannot contain more than one o-marked phrase.’
 (Saito and Hoshi 2000:264)

Precisely speaking, there are two types of double o-constraint: abstract double o-constraint and surface double o-constraint. The abstract double o-constraint, which is a very severe violation, is typically observed in Japanese causative constructions:

- (5) John-ga Mary-ni/*-o keeki-o tukur-ase-ta.
 John-ga Mary-Dat/-Acc cake-Acc make-cause-past
 ‘John made Mary make a cake.’

In (5), the sentence is fine as long as the causee ‘Mary’ is dative-case marked (i.e., *-ni*). However, when the causee ‘Mary’ is accusative-case marked, the sentence becomes completely unacceptable. This is an example of the abstract double o-constraint.

The surface double o-constraint is observed in the traversal verb construction.

- (6) John-ga Mary-ni/??-o hashi-o watar-ase-ta.
 John-Nom Mary-Dat/-Acc bridge-Acc cross-cause-past
 'John made Mary cross the bridge.'

In (6), the causee 'Mary' obtains either *-ni* or *-o*. Even if 'Mary' obtains the accusative case *-o*, and sentence (6) contains two accusative cases (one on 'Mary' and the other one on *hashi* 'bridge'), the sentence is marginally acceptable. The difference in acceptability between (5) and (6) is clear.

Furthermore, the difference between (5) and (6) is observed when they appear in a cleft construction.

- (7) a. *John-ga Mary-o tukur-ase-ta no wa
 John-Nom Mary-Acc make-cause-past Comp Top
 keeki-o da.
 cake-Acc is
 'It is a cake that John made Mary make.'
- b. *John-ga keeki-o tukur-ase-ta no wa
 John-Nom cake-Acc make-cause-past Comp Top
 Mary-o da.
 Mary-Acc is
 '(lit.) It is Mary that John made (her) a cake.'
- (8) a. John-ga Mary-o watar-ase-ta no wa hashi-o da.
 John-Nom Mary-Acc cross-cause-past Comp Top bridge-Acc is
 'It is the bridge that John made Mary cross.'
- b. John-ga hashi-o watar-ase-ta no wa Mary-o da.
 John-Nom bridge-Acc cross-cause-past Comp Top Mary-Acc is
 '(lit.) It is Mary that John made cross the bridge.'

What is striking in (8) is that the marginal acceptability disappears once example (6) appears in a cleft construction, although this is not the case in (5) (as in 7). Saito and Hoshi notice that the marginal acceptability disappears when (2b) (double *o*-construction) appears in a cleft construction.

- (9) [John-ga benkyoo-o sita no] wa nihongo-o da.
 John-Nom study-Acc did Comp Top Japanese-Acc is
 'It is Japanese that John studies.'

However, when the verbal noun *benkyoo* 'study' appears in a focus position, the sentence is not acceptable at all:

- (10) *[John-ga nihongo-o sita no] wa benkyoo-o da.
 John-Nom Japanese-Acc did Comp Top study-Acc is
 ‘(lit.) It is study that John did Japanese.’

According to Saito and Hoshi, this is expected under LF-incorporation. The verbal noun *benkyoo* ‘study’ must be incorporated into the semantic and thematic null verb *su* at LF. Otherwise, the relevant meaning is not obtained. The unacceptable sentence (10) is due to the general ban on lowering. That is, while the light verb *su* c-commands the verbal noun in (9), this is not the case in (10); i.e., the light verb *su* cannot c-command the verbal noun *benkyoo*. Based on the above observations and a general ban on lowering, Saito and Hoshi propose LF-incorporation in light verb constructions.

3 Some Problems

In the previous section, I laid out Saito and Hoshi’s LF-incorporation analysis. In this section, I will point out some problems with LF-incorporation, and claim that LF-incorporation is not plausible.

First, recall example (2a) and its LF-representation (3a) (here as 11a and 11b, respectively):

- (11) a. John-ga [NP nihongo-no benkyoo]-o suru.
 John-Nom Japanese-Gen study-Acc do
 ‘John studies Japanese.’
 b. John-ga [NP nihongo-no t_i]-o [benkyoo_i + suru].

Saito and Hoshi explain that the verbal noun *benkyoo* ‘study’ discharges its Theme role to *nihongo* ‘Japanese’ and is then incorporated into the light verb *su* ‘do’ to discharge the other theta-role (Agent) at LF. If Saito and Hoshi are correct, the prediction is that the cleft construction of (11a) will be unacceptable since the light verb *su* cannot c-command the verbal noun *benkyoo*. However, this prediction is not borne out:

- (12) John-ga sita no wa nihongo-no benkyoo-o da.
 John-Nom did Comp Top Japanese-Gen study-Acc is
 ‘It is the study of Japanese that John did.’

In (12), the light verb *su* does not c-command the verbal noun *benkyoo* as in (10). What is the reason for this unpredictable behavior?

Second, according to Saito and Hoshi, the accusative case on the verbal noun is assigned at the time of the verbal noun’s incorporation into the light

verb *su* at LF. However, there is a conceptual difficulty with this approach. According to Chomsky (1995), case has an uninterpretable feature, and the uninterpretable feature must be eliminated by the time the derivation is reached at LF. If the uninterpretable feature is in LF, the derivation will crash. LF-incorporation analysis is accounted for in the spirit of the minimalist program. Thus, Saito and Hoshi's account for case-marking at LF is completely contradicted by the minimalist assumption.

Third, consider the following sentence pairs:

- (13) a. John-ga [NP nihongo-no benkyoo]-o suru.
 John-Nom Japanese-Gen study-Acc do
 'John studies Japanese.'
 b. John-ga [NP nihongo nooryoku kenteesiken-no benkyoo]-o suru.
 John-Nom Japanese proficiency test-Gen study-Acc do
 'John studies the Japanese proficiency test.'

In (13a) and (13b), both *nihongo* 'Japanese' and *nihongo nooryoku kenteesiken* 'Japanese proficiency test' are genitive-case marked. If Saito and Hoshi are correct, the verbal noun *benkyoo* 'study' discharges its Theme role to these genitive-marked nouns, and is then incorporated into the light verb *su* at LF. However, a small modification to the sentences in (13) alter the acceptability of (13b) alone:

- (14) a. John-ga nihongo-o benkyoo suru.
 John-Nom Japanese-Acc study do
 b. *John-ga nihongo nooryoku kenteesiken-o benkyoo suru.
 John-Nom Japanese proficiency test-Acc study do

While *nihongo* 'Japanese' in (14a) can appear with the accusative case, *nihongo nooryoku kenteesiken* 'Japanese proficiency test' cannot. Hasegawa (1991) and Kageyama (1993) observe that not all pre-verbal-noun nouns such as *nihongo* 'Japanese' or *nihongo nooryoku kenteesiken* 'Japanese proficiency test' can be arguments that will be theta-marked by the relevant verbal nouns. Under the LF-incorporation analysis, it is not clear where and how this system detects the (im)possibility of theta-role discharge.

In this section, I have pointed out some problems with LF-incorporation. Based on the observations that I made, I conclude that LF-incorporation in Japanese light verb constructions is implausible. In the next section, I will propose a remedy.

4 A Proposal

One of the peculiar properties of verbal nouns is their ability to assign theta-roles, although they are categorically considered nouns. However, Baker (2003) concludes that the defining property of the verb is its ability to assign theta-roles. Baker's conclusion is based on extensive research on various types of languages, and all the languages that he observes have the theta-role-assigning property. If Baker is correct, and assuming that this is the case, Japanese verbal nouns should be regarded as verbs. Thus, a verbal noun assigns theta-roles to its arguments. If this is the case, there arise two questions. One concerns the accusative-case marking on the verbal noun. If verbal nouns are verbs, why are they case-marked? The second question pertains to the status of the verb *su* 'do'. If the verb *su* does not have semantic and thematic contents, how does it obtain its meaning? To overcome these problems, I propose that the verbal noun is nominalized by a null morpheme 'Ø', and that the verb *su* 'do' is actually a regular verb that has Agent and Theme theta-roles. Let us compare and contrast the behaviors of the regular verb *su* with the light verb construction.

- (15) a. John-ga syukudai-o suru.
 John-Nom homework-Acc do
 'John does homework.'
 b. John-ga nihongo-no benkyoo-o suru.
 John-Nom Japanese-Gen study-Acc do
 'John studies Japanese.'

Accusative case-marked nouns such as *syukudai* 'homework' and *nihongo-no benkyoo* 'study of Japanese' behave exactly the same in scrambling in (16) and topicalization in (17).

- (16) a. Syukudai-o_i John-ga t_i suru.
 b. Nihongo-no benkyoo-o_i John-ga t_i suru.
 (17) a. Syukudai-wa_i John-ga t_i suru.
 b. Nihongo-no benkyoo-wa_i John-ga t_i suru.

Longobardi (1994) proposes that DP and NP are distinguished in relativization. That is, if a relevant noun can be relativized, it is a DP, while if not, it is an NP. The examples in (18) are relativized forms of (15a) and (15b), respectively.

- (18) a. John-ga suru syukudai.
 John-Nom do homework
 ‘the homework that John does’
 b. John-ga suru nihongo-no benkyoo
 John-Nom do Japanese-Gen study
 ‘The study of Japanese that John does’

The examples in (18) show that these relativized nouns are DPs. Now recall the marginal light verb construction (2b) (here as 19).

- (19) ??John-ga nihongo-o [NP benkyoo]-o suru.
 John-Nom Japanese-Acc study-Acc do
 ‘John studies Japanese.’

There are two accusative-marked NPs; *nihongo-o* and *benkyoo-o*. Although the surface forms are the same, their behaviors are quite different.

- (20) *Scrambling*
 a. Nihongo-o; John-ga t_i benkyoo-o suru.
 b. *Benkyoo-o; John-ga nihongo-o t_j suru.
 (21) *Topicalization*
 a. Nihongo-wa; John-ga t_i benkyoo-o suru.
 b. *Benkyoo-wa; John-ga nihongo-o t_j suru.
 (22) *Relativization*
 a. John-ga benkyoo-o suru nihongo
 b. *John-ga nihongo-o suru benkyoo

If Longobardi is correct, *nihongo* ‘Japanese’ is a DP, while *benkyoo* ‘study’ is an NP. I propose that the actual internal structure of (19) is as follows:

- (23) John-ga [NP [VP [DP nihongo]-o [V benkyoo]] [N Ø]]-o suru.³

Example (23) indicates the existence of V beneath nominalization. A piece of evidence for this structure is offered by adverbial modification⁴.

³A more elaborate account is available in Kamiya (2005a,b).

⁴Mark Baker (p.c.) points out that the nominalized clause in (23) will not appear in the subject position:

- (i) Nihongo*-o/-no benkyoo-wa muzukasii.
 Japanese-Acc/-Gen study-Top difficult
 ‘Studying Japanese is difficult.’

Usually, verbs are modified by adverbs, not adjectives. Observe the following sentence:

- (24) John-ga nihongo-o subayaku/*subayai benkyoo-o suru.
 John-Nom Japanese-Acc quickly/quick study-Acc do
 ‘John studies Japanese quickly.’

The adverb *subayaku* ‘quickly’, not the adjective *subayai* ‘quick’, modifies the verbal noun. Example (24) is comparable with example (25):

- (25) [DP Nihongo-no subayai/*subayaku benkyoo]
 Japanese-Gen quick/quickly study
 ‘the quick study of Japanese’

As example (18b) shows, *nihongo-no benkyoo* ‘study of Japanese’ is a DP. Thus, within DP, the adjective, not the adverb, is used for modification.

In this section, I proposed that verbal nouns are verbs that are nominalized, and that the verb *su* is a regular verb. The current proposal does not encounter the same problems as LF-incorporation.

5 Conclusions and Consequences

In this paper, I have shown that there is no LF-incorporation in Japanese light verb constructions. Rather, I have proposed that verbal nouns are verbs, and that the verb *su* is a regular verb. In other words, the verbal nouns and the verb *su* are independent theta-role assigners. If this is the case, an interesting result is obtained. Recall the sentence that violates the abstract double o-constraint (causative construction).

- (26) John-ga Mary-ni/*-o keeki-o tukur-ase-ta.
 John-ga Mary-Dat/-Acc cake-Acc make-cause-past
 ‘John made Mary make a cake.’

One possible account is to assume that the nominalized NP in the light verb construction is an obligatory control construction. Thus, there is a controlled subject in the nominalized NP in (23), which is controlled by the subject ‘John’. On the other hand, example (i) does not obtain a controller. Thus, the impossibility of (i) may be due to the lack of a controller. A similar control construction is found in Basque and Korean (see Kamiya 2005b).

In (26), the theta-role assigner is the verb *tukur* 'make'. Under (26), there are two accusative cases with a sole theta-role assigner. However, recall the double o-sentence:

- (27) ??John-ga nihongo-o benkyoo-o suru.
 John-Nom Japanese-Acc study-Acc do
 'John studies Japanese.'

As I proposed in the previous section, the verbal noun is a verb, and the verb *su* is a regular verb. That is, there are two independent theta-role assigners in this sentence. With respect to the accusative cases, they exist under different theta-role assigners, *benkyoo* and *su*, respectively. One observation that is made in the current study is the difference between the abstract and surface double o-constraints. That is, the severe violation is due to two accusative cases under a single theta-role assigner, while the mild violation is due to one accusative case under a single theta-role assigner. Under the LF-incorporation analysis, i.e., the assumption that VN and *su* form a single complex predicate, this observation cannot be made. In addition, the current observation reaches the same conclusion as Poser (2002), whose claim is that the accusative case in Japanese is assigned by a single theta-assigning predicate.

The second consequence is related to case-marking. I pointed out in section 3 that Saito and Hoshi's case assigning is contradictory given the minimalist assumption. Then, where does the case marking take place? Observe the following question and answer:

- (28) Q: John-wa nani-o sita no?
 John-Top what-Acc did Q
 'What did John do?'
 A: Nihongo-no benkyoo(*-o)
 Japanese-Gen study(-Acc)
- (29) Q: Who did John meet?
 A: Her.

In the nonsentential answer in 28A, if the answer appears with the accusative case, it is unacceptable⁵. This is contrasted with the English nonsen-

⁵Satoshi Tomioka (p.c.) points out that a nonsentential answer is possible if a dative phrase appears with an accusative answer (i). If this judgment is correct, accusative-case marking may be licensed by the existence of a dative phrase. I would like to leave this issue for future research.

tential answer in (29A). The answer ‘Her’ is in the accusative form. Why can’t ‘study’ appear with the accusative case marker? If the accusative case is licensed at LF in line with Saito and Hoshi, there will be no explanation. If we assume that the case is licensed pre-spell-out syntax, there is no explanation why the accusative form is not correct in (29A). I assume that Japanese case marking takes place at PF. Case marking at PF in Japanese is not novel. Fukui and Sakai (2003), Kuroda (1978), Harada (2002), Nakamura (2004) among many others assume that case marking in Japanese takes place at PF. On the other hand, case marking in English takes place at pre-spell-out syntax. That is, the place where the case marking takes place is parameterized between two languages. If so, what mechanism is used to assign case at PF? This is beyond the scope of the current paper, and left for future research.

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- (i) Q. John-wa dare-ni nani-o ageta no?
 John-Top who-to what-Acc gave Q
 ‘What did John give to whom?’
- A. Mary-ni keeki-o
 Mary-to cake-Acc

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